

**ADVISORY COUNCIL MEETING IN ISRAEL**

NOVEMBER 19<sup>TH</sup>-20<sup>TH</sup> 2014

DJANOGLY HALL, MISHKENOT SHA'ANANIM, JERUSALEM

<b><u>Wednesday, Nov. 19</u></b>		<b>pp.</b>
08:30 – 09:00	Orientation	
09:00 – 10:15	Opening session: Standards of Excellence	<b>6</b>
10:30 – 11:30	Learning Diagnostics Tools	<b>11</b>
11:45 – 12:45	Teachers' Professional Learning Communities	<b>15</b>
13:00 – 14:15	Lunch: Master Teachers	<b>17</b>
14:30 – 15:30	Video Documentation of Classroom Lessons	<b>19</b>
15:45 – 16:45	Teacher Residency Clinical Training Programs	<b>21</b>
17:00 – 18:15	Collective Impact	<b>23</b>
18:45 – 20:45	Dinner at Toro Restaurant: Partnering with Municipalities	<b>25</b>
<b><u>Thursday, Nov. 20</u></b>		
08:30 – 08:45	Morning Greetings	
08:45 – 10:15	Message and Communications	<b>34</b>
10:30 – 12:00	Challenges and Obstacles	<b>37</b>
12:15 – 13:15	Lunch	
13:15 – 14:15	Strategic Focus	<b>40</b>
14:30 – 16:00	Measurement and Assessment	<b>42</b>
16:00 – 17:15	Wrap-up session: Reflections and Insights with the Foundation's Staff	
18:00 – 21:45	A Special Evening at the David Citadel Hotel dedicated to Excellent Teaching	<b>49</b>
<b>Appendices</b>	A. Updated Strategic Roadmap (Draft)	<b>51</b>
	B. National and International Indicators	<b>67</b>
	C. Trump Foundation in Numbers	<b>73</b>
	D. Insights and Recommendations from Advisory Council 2012	<b>76</b>

Dear Advisory Council Members,

Three years after the launch of the Trump Foundation is an opportune time to pause, look both backwards and sideways, and reflect on the ways and means to achieving the goals the foundation has set for itself.

For this reason we have called together the Advisory Council. This voluntary panel is made up of educational professionals and leaders, half of whom are outstanding Israeli teachers of mathematics and the sciences. The chairman of the council is Professor Lee Shulman.

Together with Professor Shulman, we have earmarked the following *questions* as representing central issues we would like to discuss during the upcoming gathering:

1. Taking a retrospective look at the Advisory Council's insights and recommendations from 2012 (see pp. 76-85), which steps did the foundation take in order to implement the recommendations, have they borne fruit, and what may be modified?
2. In preparation for an end-to-end review of the foundation's activities planned for 2016, what performance indicators should be monitored and what methods of documentation and evaluation are appropriate?
3. Looking closely at the strategic goal of the foundation 'to expand the circle of excellence in mathematics and the sciences':
  - a. How does the foundation define and measure 'excellence' and what is 'quality teaching'? What happens when this message encounters education in the real world?
  - b. Are there alternative definitions of excellence that do not involve increasing the number of students who successfully complete 5-unit advanced high school majors in mathematics and the sciences?
  - c. Does the call for studying and teaching math and the sciences in high school fall on attentive ears in society, academia and the labor market? Is this situation expected to change during the coming decade?
4. What are the implications of the foundation's activities vis-à-vis the special needs of various communities in Israel? For example, the ever-growing ultra-Orthodox community, the female students who are under-represented in physics courses, and communities on the social and geographic periphery?

In an attempt to address these questions, the council will meet over two days with the foundation's staff. Several meetings will be closed and intimate, but many will involve invited guests – experts in the issues being discussed. The two days will end with a special gala evening, which will be dedicated to 'quality teaching'.

In preparation for the meetings, the foundation's staff has prepared a draft of an updated [Strategic Roadmap](#) that attempts to take into account the lessons learned as a result of the three years of activity (see pp. 51-66). This document is being sent to all participants and guests in order to serve as a shared platform for discussion. Our hope is that these discussions will provide feedback and insights for revising the roadmap even further.

We wish everyone two fruitful days and sincerely thank all participants who have spared neither their efforts nor their talents in helping the foundation on its path. This is not something we take for granted, and we are grateful to you all.

**The Trump Foundation staff**

### **2014 Advisory Council Members:**

1. Professor Lee **SHULMAN**, Chairman. President Emeritus of The Carnegie Foundation for the Advancement of Teaching and the first Charles E. Ducommun Professor of Education at Stanford University. Shulman is a past president of the American Educational Research Association (AERA) and a member and former president of the National Academy of Education.
2. Dr. Abir **ABED**, A chemistry and environmental studies teacher at the Galilee School in Nazareth, the only non-selective Arab high school in the city. Abed earned her Ph.D in the teaching of chemistry at the Technion. Abed was a finalist of the Trump Master Teacher Award in 2012.
3. Mr. Genady **ARNOVICH**, Former mathematics teacher in Mevasseret Zion, Chief Coordinator of the National mathematics curriculum and head of the mathematics assessment team for the Ministry of Education. Arnovich has written and edited several textbooks for the teaching and learning of mathematics in Israeli high schools.
4. Mr. Danny **BAR-GIORA**, Former Director of the Jerusalem Education Administration Department and head of the Ministry's unit responsible for implementing wage agreements with the teacher unions. Previously, Mr. Bar-Giora served as a school principal, and currently he heads the Mandel School for Educational Leadership.
5. Mr. Shlomo **DOVRAT**, Founder and General Partner of Carmel Ventures. In 2003 Mr. Dovrat was appointed as chairman of a National Task Force for the Advancement of Education in Israel. He is one of the founders of Israel Venture Network, a philanthropic organization led by high-tech executives in Israel.
6. Ms. Avital **ELBAUM-COHEN**, High school teacher of mathematics and physics in Rehovot. Previously she developed and tutored online professional development workshops for teachers and co-authored a textbook. Elbaum-Cohen is a Ph.D candidate at the Weizmann Institute of Science, and her research thesis focuses on reading mathematical texts in high school.
7. Professor Marcia **LINN**, Professor of development and cognition at the University of California, Berkeley. She is a member of the National Academy of Education and a Fellow of the American Association for the Advancement of Science, the American Psychological Association, and the Association for Psychological Science. Professor Linn earned her Ph.D. at Stanford University.
8. Mr. Kobi **SHVARZBORD**, Physics teacher at the Leo Baeck Education Center in Haifa. He is a graduate of the Weizmann Institute of Science and the first Israeli teacher to be trained at the particle accelerator of CERN, the European Nuclear Research Institute in Geneva. He was the winner of the Trump Master Teacher Award in 2013.
9. Mr. Eyal **SINAI**, Physics teacher in Modi'in for the past eight years, where he leads the local student team to the International Physics Olympics. Previously, he

served as a physics teacher in Kiryat Shemonah and then in the development town of Kiryat Malachi in the South. Sinai was a finalist of the Trump Master Teacher Award in 2012.

10. Ms. Dalit **STAUBER**, Former Director General of the Ministry of Education and head of its Tel-Aviv District. English as a Second Language teacher by training at the Bar Ilan University, Stauber served as a teacher, a pedagogic director and vice principal at a high school in Ramat Hasharon. She is a graduate of the Mandel program for senior executives of the Ministry of Education.

In addition, we will be joined by 3 members of the foundation's Board of Directors:

Mr Toby **BERNSTEIN**, businessman in retail and manufacture, has specialized in the clothing and furniture industries across South Africa. He was a partner of Canvas and Tent, a world leader in the manufacture and trading of canvas-related products. Today Mr. Bernstein is involved with Walk-in-25, a community development company aiming to uplift and empower communities and revive local economies in townships as well as rural areas of South Africa.

Mr Charles **FREEDMAN**, former Deputy Governor of the Bank of Canada. He currently serves as director and chair of the audit committee of the Canadian Depository for Securities Limited and is a member of the Board of Governors of Carleton University. He is also co-director of the Centre for Monetary and Financial Economics at Carleton University and is a consultant for the International Monetary Fund. Freedman was born and raised in Toronto. He completed his MA at Oxford University in the UK and received his PhD from MIT.

Mr Eddy **SHALEV**, Chairperson. Founder & Managing Partner of Genesis Partners, is a founding leader of Israel's venture capital industry. Mr. Shalev has played a key role in the high-tech sector, including in Fundtech, Paradigm Geophysical and Orbot Instruments, and is currently a director of Aternity, Profitect and WorkLight. He is also Chair of the Endowment Subcommittee at Beit Issie Shapiro. He holds an MSc in Information Systems and a BA in Statistics and Psychology from Tel Aviv University.

## **OPENING SESSION**

Status Report and Discussion on the **Definition and Standards of Excellence** in  
Advanced Level Mathematics and Science Studies in High School

*19 NOVEMBER 2014, 09:00-10:15, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

Since its establishment, the Trump Foundation has endeavored to fulfill the goals of its [Strategic Roadmap](#), which was articulated in 2011. This roadmap stresses the importance of expanding the circle of excellence in secondary education in Israel in mathematics and the sciences and emphasizes the role of classroom teaching as a lever for improving the quality of learning.

As a grant-making foundation, the Trump Foundation collaborates with not-for-profit educational organizations and provides them funding to accomplish shared goals. Until now (Nov.2014), the foundation has approved some 95 grants for projects focusing on any one of its three strategic routes.

In our opening session, we will lay the basis for discussion and deal with two issues: Initially, the foundation's staff will acquaint the Council with its activities since the Council's 2012 meeting, with emphasis on the insights and recommendations presented during its deliberations then. Later, we will present and discuss materials prepared especially for this meeting regarding the question, "What is excellence and do matriculation exams measure it properly?"

### **QUESTIONS FOR DISCUSSION:**

1. Are the definitions of 'excellence' in studying mathematics and the sciences and 'quality teaching' in high school in those disciplines clear, persuasive, and satisfactory? What is missing and what should be modified?
2. Should the foundation continue to maintain that only 5-unit advanced matriculation exams are the way to measure excellence, and if not, why, what is lacking, how can the gap be narrowed and what are the alternatives?
3. Are the foundation's approaches to excellence and teaching proven on the ground, agreed upon by teachers and other educators, and can they be achieved? What is required in order to assimilate them into the schools?

As **background** to the discussion, we recommend reading the following:

- A. The [Strategic Roadmap](#) of 2011 and the draft of the [Updated Strategic Roadmap](#) of 2014 (pp. 51-66);
- B. Ms. Irina Veisman and Mr. Gedady Arnovitch's report (pp. 7-10).

October, 2014

## LESS CALCULATING – MORE THINKING

*Which characteristics of excellence are measured by the physics and mathematics matriculation exams, and what changes have the exams undergone?*

The ultimate yardstick for measuring student achievement in the Israeli education system is the matriculation exams taken at the end of high school. Although the exams are not calibrated and their level of difficulty changes from year to year, they are used as a selection criterion for acceptance to institutes of higher education. Therefore, the Trump Foundation decided to use the matriculation as its primary indicator for success. The recent reform, declared by the Ministry of Education and the Higher Education Council, to exempt high achievers in advanced mathematics and science majors from a Psychometric exam, only reinforces this decision.

Nonetheless, many decision-makers, experts, researchers, and teachers are from time to time critical of the central role played by matriculation exams. They argue that the exams only focus on short-term knowledge and skill techniques and are therefore not an appropriate instrument for measuring excellence. In contrast, others maintain that in recent years, the standard of the exam, particularly of the advanced mathematics track, has been raised considerably in order to measure high-order thinking, knowledge transfer and implementation.

For the foundation, which depends on the matriculation exams to evaluate if its goals have been reached, this is an issue that needs to be resolved. In order to do so, the foundation organized a series of consultations and discussions whose objective was to answer the following questions:

1. What types of excellence do the physics and mathematics matriculation exams at the 5-unit level measure, and how do they compare with international standards?
2. What changes have been made in the last twenty years to the matriculation exams, and how do these changes impact which characteristics of excellence they measure?

## PROCEDURE

The foundation approached two experts, experienced teachers who hold senior positions at the Ministry of Education's Pedagogical Secretariat responsible for curriculum and matriculation exams. **Ms. Irina Weisman** is a national adviser of physics teaching and **Mr. Genady Arnovich** is in charge of the mathematics curriculum. These experts were asked to make an in-depth study of the five-unit matriculation exams from

1990 to 2014, to analyze them in light of the questions posed here, and to report on their conclusions. After they submitted their draft report and preliminary conclusions, the foundation asked 95 leading physics and mathematics teachers for their feedback. The procedure was as follows:

1. The 95 teachers received an online questionnaire containing questions taken from matriculation exams and criteria derived from the experts' report. They were asked to classify each exam question according to the skill required to solve it (technical ability, understanding mathematical/physics principles, reading comprehension, transposing between various representations, etc.) In addition, they were asked to note for each question what additional elements were involved, for example, if the question required integration between topics, if the phrasing of the question was surprising or unfamiliar, or if there was an effective and elegant solution to the problem. To conclude, the teachers were asked to classify the level of the mathematical or scientific literacy required to answer the question according to the standards of excellence defined by the OECD in the PISA exams. The answers were collected and processed in preparation for the second stage of work.
2. The second stage convened 35 teachers for a workshop, in which they were asked to analyze the matriculation exams according to the criteria collected during previous stages. The meetings were documented and the materials that were collected during this and previous stages form the basis for this report.

## **WHAT TYPES OF EXCELLENCE DO THE EXAMS MEASURE?**

During the workshop, the teachers considered what types of excellence the exams measure, and the areas which students who receive high grades on the 5-unit exams in physics and mathematics excel in. Their analysis pointed to in-depth understanding of concepts and the ability to reach conclusions, make connections between different subjects, and think reflectively as the main elements of excellence.

The mathematics teachers described their outstanding students as those who are able to understand the provenance of a question and its context so that they could function in ways that are non-algorithmic. In addition, outstanding students are required to function in surprising and unfamiliar circumstances. The teachers also noted that along with cognitive skills, they also possess personal characteristics like determination, emotional resilience, and the ability to cope with uncertainty.

The physics teachers emphasized that high-level ability to integrate a variety of skills defines excellence: technical ability, understanding the principles of physics, literacy, synergy, retrieval, and implementation. In order to reach high capability levels in many skills, students must undergo a multi-year process that includes developing critical thinking, self-motivation, curiosity, effort, and interest.



## MAIN INSIGHTS - MATHEMATICS

Between 1990 and 2014 the mathematics exam program underwent changes; corresponding changes were also made in the nature of the exam questions. (See the detailed report in Hebrew [here](#)).

First of all, it should be noted that changes made in some sections of the exam were different than in others. In general, in recent years the exams have become **more long-winded and complex** with the focus more on **understanding the different layers of a question, mathematical literacy, drawing conclusions, and the connection between subjects**, so that it is more difficult for students to decide not to devote study time for the test to certain parts of the curriculum. Together with that, **the level of algorithmic technique required to solve the problems was substantially minimized**:

1. Differential and integral calculus of rational and irrational functions, and exponentials and logarithmic functions: require more reflective thinking and a more deep-seated understanding of elementary concepts. Technical mastery is not enough to solve the problem. The questions are longer and more long-winded. The need to use algorithmic skills was reduced.
2. Solid geometry and vectors: In general, the subject has been scaled down in recent years. The questions reflect a demand to raise the level of thinking, integration, and connectivity between algebraic vectors and geometric vectors, along with decreasing the use of trigonometric techniques. In this area it is possible to find intriguing, interesting questions that have insight and surprising solutions.
3. Geometry: In recent years the geometry questions have become easier in comparison with those before 2008. However, even after this change, deductive geometry is taught at a higher level than in other countries.
4. Trigonometry: In this subject there is less use of trigonometric equations and less technical ability is now required to solve the questions.

## MAIN INSIGHTS - PHYSICS

Like the mathematics matriculation exams, there is a trend in physics to **shift from requiring high technical skills to questions requiring deliberation, understanding of the principles of physics, and argumentation of diverse representation**. In addition, the students must be able to reflect on and explain their thought processes and their proofs (understanding is not sufficient to reach a solution; they must also have the ability to explain how they reached it). The physics exams have also become more long-winded and complex. (See the detailed report in Hebrew [here](#)).

It is important to note that even though in both disciplines teachers say that the texts are longer and more long-winded, and also require better subject-specific literacy, these two phenomena are not identical.

Teachers have indicated that the wording of the questions is sometimes awkward, unclear, and ambiguous, making problem solving difficult. In addition, in both disciplines, experts and teachers said there is lack of uniformity between the forms of the various exam sections from the same year and from year-to-year. The lack of standardization makes comparison between students' achievement levels difficult. An interesting insight that came to light is that today the exams are not only meaningful because they measure the knowledge that students bring with them to the exam, but also as an additional step in the learning process because during the exam, students are frequently required to go through a learning process independently.

## CONCLUSIONS

Matriculation exams in mathematics and physics at the 5-unit level have undergone changes in the past few years, mainly manifested in the shift from demonstrating high technical skills to demonstrating deep-seated learning that requires understanding, high-order thinking, longer explanations, and implementation.

Five-unit matriculation courses are considered difficult – they require perseverance, determination, and the willingness to devote time to practice. During their studies, students must cope with challenges, difficulties, and sometimes failure and they must learn to do so successfully.

Learning processes make students more aware of the state of their knowledge, teach them to be able to choose among various strategies of answering and justifying their choices, and to independently manage their studies and thinking.

All of these lead to the conclusion that matriculation exams in physics and mathematics at the 5-unit level, and the courses in preparation for the exams, help students reach levels of excellence. However:

- a. Since the exams are not calibrated, they are sensitive to continuous fluctuations and surprises that make it difficult for both teachers and students and are liable to endanger the quality of the exams;
- b. The current tendency towards extensive verbal explanations has somewhat shifted the focus of teaching and learning;
- c. Recent changes have not taken into account the need to align the mathematics curriculum with the physics curriculum.

*\*It is with sincere gratitude that we thank the educators who participated in preparing this report.*

## **LEARNING DIAGNOSTIC TOOLS**

### **How Can Mathematics and Science Teachers Incorporate the Use of Learning Diagnostics Tools in their Classrooms?**

*19 NOVEMBER 2014, 10:30-11:30, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

As the number of students who major in mathematics and the sciences increases, classes will become larger and the students will become more diverse. Accordingly, the requirement for teachers to address the needs of individual students to help them persevere and succeed in their studies will become even more important. To succeed, teachers will have to possess a real-time picture of their students' progress and the cognitive style of each of them.

Some countries have already recognized the issue and initiated impressive projects to develop tools and methods for helping teachers monitor their students in real-time (See pp. 13-14). Prompted by these actions, for the past two years the foundation has supported a series of R&D programs dealing with various disciplines and age levels, proposing modes of action from complementary angles:

- A. Tel Aviv University is developing a database of middle school geometry and algebra misconceptions and typical errors;
- B. At the Weizmann Institute, typical mistakes in high school physics are being translated for teachers and prepare them as diagnostic assignments;
- C. In mathematics, the Weizmann Institute is developing individual performance assignments to help teachers understand the characteristics of student learning in the tenth grade;
- D. At the University of Haifa, technology is being used to help secondary school math teachers identify various obstacles to acquiring knowledge and skills that students come up against.

#### **QUESTIONS FOR DISCUSSION:**

1. How can teachers become thoroughly familiar with the cognitive style of each student, to understand the origin of mistakes, and to modify their teaching methods in real time in order to provide personal solutions for each student?
2. How can simple and practical tools be created so that they will enable teachers in classrooms not fitted with individual technology to integrate them into their teaching practice?
3. How can the diagnostic tools be utilized so that they are best suited to the learning goals, the curriculum and the demands of the matriculation?

As **background** to the discussion, we recommend reading the following:

- A. The draft of the 2014 [Updated Strategic Roadmap](#), (pp. 51-66);
- B. Example for Learning Diagnostics Programs (pp. 13-14)

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## EXAMPLES FOR LEARNING DIAGNOSTICS PROGRAMS

### MATHEMATICS ASSESSMENT PROJECT (MAP)

The Mathematics Assessment Project (MAP) aims to design and develop assessment tools to support US schools in implementing the Common Core State Standards for Mathematics. The project is directed by Hugh Burkhardt, Malcolm Swan, Daniel Pead, Phil Daro and the Principal Investigator, Alan Schoenfeld. It is collaboration between the University of California, Berkeley and the Shell Center team at the University of Nottingham, with support from the Bill & Melinda Gates Foundation. The team works with the Mathematics Assessment Collaborative (MAC) and school systems across the US and UK to develop improved assessment.

MAP materials are of two complementary kinds:

- Summative tests or tasks that exemplify the performance targets that the standards imply. The tests show the kinds of performance that students in rich math programs will achieve, with the range and balance that the standards describe.
- Classroom Challenges, which both reveal and develop students' understanding of key mathematical ideas and applications. These lessons help teachers and their students to work effectively together to move each student's mathematical reasoning forward.
- In addition, professional development modules are offered to help teachers with the pedagogical and mathematical challenges that this approach involves. Built around the Classroom Challenges, these modules are designed for use by groups of teachers.

### SILICON VALLEY MATHEMATICS ASSESSMENT COLLABORATIVE (MAC)

The Silicon Valley Mathematics Assessment Collaborative (MAC) was created in 1996 by The Noyce Foundation to provide richer assessment information for teachers, schools, and districts to use to inform instruction. The project's primary components are formative and summative assessment systems, pedagogical content coaching, ongoing professional development and leadership training.

MAC uses tasks designed by The Mathematics Assessment Project (MAP) which assess concepts and skills that correspond to the core ideas taught at each grade. Teachers are involved in scoring these performance assessments while discussing specific student learning as part of their professional development.

The combination of open tasks and weighted rubrics provides a rich picture of student performance, with a description of common misconceptions and evidence of what students understand. The reports include student work samples at each grade level showing the range of students' approaches, successes, and challenges. The reports also provide implications for instruction, giving specific suggestions and ideas for teachers as a result of examining students' strengths and the areas where more learning experiences are required.

### AMPLIFY

Amplify was established in 2012 by Joel Klein, former chancellor of the New York City Department of Education, and was based on the foundations of Wireless Generation, a pioneer in adaptive learning systems. The program develops computerized learning materials in accordance with Common Core standards and incorporates diagnostic tools designed to help the teacher understand each student's progress and how to help each student advance in his or her studies.

Teachers and students participating in the project receive a tablet computer, which they use to manage the class and monitor the progress of learning. The company offers its customers professional development for teachers and support for participating schools. To date, some 3 million students and 200,000 teachers have used the program, mainly in the areas of language, mathematics and science for middle schools.

### MATH WHIZZ

Whizz Education, a commercial company founded in England in 2004, offers students an online virtual tutor. The company's pedagogical-technological algorithm is based on the "mathematical age" of the student (standard); it assesses each student's "mathematical age," adapts a range of materials and exercises for each and helps them advance.

The system offers 1,200 math lessons for elementary and early middle school ages and is used in some 4,000 schools in the UK; it is also used by tens of thousands of other students in various countries throughout the world. From a technological perspective, the system is PC-based and is also adapted for a smart board, but monitoring is exclusively based on practice at the computer.

### NEW CLASSROOMS INNOVATION PARTNERS

New Classrooms Innovation Partners is a non-profit organization established in 2011 with the aim of translating the idea of personalized learning into practice in schools, combining technology and innovative pedagogy (adaptive learning systems). The organization developed a pedagogical algorithm (map of knowledge and skills) in the fields of learning mathematics. It uses this algorithm to diagnose and analyze the learning progress of students, and offers them and their teachers recommendations for further study, including content, method and pace of study. The algorithm is adapted to the textbooks and assessment measures of the Common Core.

The organization's flagship program is Teach to One: Math for grades 5 to 8, which completely replaces the regular method of instruction and textbooks in schools. This program is today working with 6,000 students whose schools are changing the conventional structure of the classroom. Students learn in different ways and move from one point to the next in accordance with the diagnosis of their situation. This includes: instruction by the teacher, group learning, software-based learning and remote guidance. Each student is assessed daily and the individualized program of study for the next day is based on this assessment, in accordance with the student's preparedness and situation. The students advance at their own individual pace and with the instruction method that is best suited for them.

## **PROFESSIONAL COMMUNITIES FOR TEACHERS**

What are the Characteristics of Effective **Teachers' Professional Learning Communities** that Emphasize Student Learning and Thinking and Advance Student-focused Instruction?

*19 NOVEMBER 2014, 11:45 – 12:45, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

Teachers need professional communities to aid them in developing teaching skills that focus on the learning styles of each student. The literature differentiates between two types of professional communities: The first - 'learning communities' - are comprised of teachers who teach the same subject discussing content and teaching methods. The second - 'implementation communities' - are comprised of teachers teaching various subjects in the same school discussing how to meet the needs of specific students.

The mission of the foundation is to assist in building effective integration between study and practice and to unify as much as possible the two types of communities. In this way, teachers will be able to develop a collaborative approach to teaching; documenting and analyzing students' learning; both offering and receiving feedback on their teaching; designing ways of monitoring learning progress; building a support network for students; sharing insights, tools, and resources; mentoring and guiding new as well as veteran teachers; developing individual development programs for themselves; and together keeping up-to-date on scientific and professional literature.

During the last three years, the foundation has supported a Weizmann Institute program establishing professional communities of physics teachers around the country. It also supported the launch of school-based professional communities led by the Branco Weiss Institute and Kadima Mada. Recently, among other projects, initial steps were taken by the University of Haifa to establish professional communities for teachers of 5-unit matriculation studies in mathematics.

### **QUESTIONS FOR DISCUSSION:**

1. What needs to be done so that professional communities of teachers can help teachers customize their teaching methods to suit the ability, difficulties, cognitive style, and learning pace of each student in their classes?
2. What is the place and the role in the teaching community of diagnostic results and student outputs, and of analyzing classroom-based videos?
3. What should be the professional attributes of the communities' instructional coaches; what skills and traits do they need to have, and what training and mentoring do they need?

As **background** to the discussion, we recommend reading the draft of the 2014 [Updated Strategic Roadmap](#), (pp. 51-66);

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MS. GEULA **SEVER**, University of Haifa

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## **MASTER TEACHERS**

### **How can Government and Philanthropy Address the Professional Needs of Master Teachers?**

*19 NOVEMBER 2014, 13:00-14:15, LUNCH, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

In professions whose practitioners develop their professional knowledge through practice, it is expected that experienced members of the profession will take positions of leadership in the professional sphere, lead staff, and mentor newcomers. Similarly, in schools, there are outstanding teachers who are appreciated by their colleagues – they consult with them and turn to them when they experience professional difficulties. We believe that if these valued teachers were to play a more substantial role as instructional coaches, steering the course of teacher improvement and learning, there would be a greater chance for student-focused quality teaching to put down roots.

To achieve this goal, in cooperation with the Ministry of Education and Yad Hanadiv, we asked the Israel Academy of Sciences and Humanities to carry out a study, which concluded a few months ago. The resulting principal recommendation was: to establish a cadre of master teachers to coach learning communities of teachers. Central to their work should be clarification and development of pedagogical and content-related knowledge and development of the art of teaching through serious discourse with teachers, based on their experiences. Knowledge garnered from these activities should be processed by a unit specializing in content R&D, and then transferred for use by teachers and the education system, which will develop it further. (To read the detailed report, please click [here](#))

Following the report, three working groups are now being formed:

1. Policy group, led by the Ministry of Education, focusing on job description, standards, compensation and systemic organization;
2. Research and Development group, led by Yad Hanadiv, concentrating on knowledge and theory, ways to translate them to practice and the professional infrastructure;
3. Practice group, led by the Trump Foundation, deals with needs and expectation from master teachers and the methods in which they wish to advance the quality of teaching.

The goal of the discussion is to listen to the master teachers involved in improving the quality of teaching and to hear from them about their experiences and the challenges they meet, the needs they have identified, and what they expect from the planning and implementation process.

#### **QUESTIONS FOR DISCUSSION:**

1. What are the needs of master teachers and what conditions and support do they require in order to most effectively lead improvement processes and coach teachers?

2. What professional development processes are required for master teachers in order to further improve their expertise and capabilities?
3. How can master teachers work with teacher communities to gather practical knowledge about teaching? How will they document, conceptualize, and propagate this knowledge?

As **background** to the discussion, we recommend reading the following:

- A. The draft of the 2014 [Updated Strategic Roadmap](#), (pp. 51-66).
- B. Master Teachers as Agents of Change in the Education System [Activity Report](#), Steering Committee, Initiative for Applied Education Research. Prof. Miriam Ben-Peretz and Prof. Lee Shulman.

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MR. GAL **FISHER**, Yad Hanadiv

MR. MOTI **ROSNER**, Ministry of Education

MR. EYAL **RAM**, Ministry of Education

MR. ELI **SHALEV**, Physics teacher

## **VIDEO DOCUMENTATION OF CLASSROOM VIDEOS**

What are the Most Effective Practices for Utilizing **Video Documentation of Classroom Lessons**, in order to Help Teachers to Focus on Student Learning and to Collaboratively Improve their Instruction?

*19 NOVEMBER 2014, 14:30 – 15:30, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

Teaching and learning take place in isolation, within the walls of the classroom; and consequently, teachers lack the means to turn their teaching practices into open and shared knowledge. Filming real classroom situations enables teachers to observe their professional performance and that of their colleagues, and reflect on and analyze what they see. Through video, teaching and learning escape the confines of the classroom to penetrate the professional space. This methodology enables teachers to develop professionally through their own actions and those of others by focusing attention on how their students learn and the link between teaching and the progress of each student in the class.

For the past three years, the Trump Foundation has acted as catalyst for integrating video recording in classrooms to help teachers document and analyze the cognitive style of each student in their classes and to transform their approach to teaching to one that focuses on the individual progress of their students. In this framework, a study group attended by researchers, policy-makers, and educators involved in professional development and practice was convened to learn what is happening around the world. As a consequence, the Ministry of Education formulated a program promoting integration of video into professional development programs for experienced teachers, operated by eight different organizations. The foundation assists these organizations in establishing common standards, sharing knowledge and experience, and learning from one another.

In addition, the foundation has invested in programs that film, store, analyze, and process videos from the classrooms for use in training programs for mathematics and physics teachers. In addition, video is used by many of the foundation's programs to assist in mentoring and providing feedback, for example in the Teach First Israel, regional video clubs, and professional learning communities for teachers.

### **QUESTIONS FOR DISCUSSION:**

1. How can classroom-based video recordings help teachers focus on students' learning and cognitive styles and, together with their colleagues, improve teaching practice?
2. Is it desirable to use student work and diagnostic findings regarding cognition and learning styles to advance the discussion and analysis of classroom video recordings? If so, how can it be accomplished?
3. What are the challenges when integrating the use of video into teacher development programs? What components are missing; what qualifications and training do mentors require; and what kinds of support are needed?

As **background** to the discussion, we recommend reading the following:

- A. The draft of the 2014 [Updated Strategic Roadmap](#), (pp. 51-66).
- B. "How Teachers Learn from Video Recordings," [Final Report](#) of the learning group, Initiative for Applied Education Research

### **PARTICIPANTS**

MR. AMI **BARAM**, Alliance Israelite Universelle

PROF. ADAM **LEFSTEIN**, Ben Gurion University of the Negev

DR. SALEIT **RON**, Teach First Israel

MS. LILI **RUSSO**, Ministry of Education

MS. IRIT **WOLFGOR**, Branco Weiss Institute

MS. TZILA **YARHI**, 'Adasha', Weizmann Institute

## **CLINICAL TRAINING OF TEACHERS**

### **What Factors are required for an Effective **Teacher Residency Clinical Training Program** for Mathematics and Science Teachers?**

*19 NOVEMBER 2014, 15:45 – 16:45, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

A large number of mathematics and science teachers are nearing retirement age, including many who emigrated from the former Soviet Union during the 1990s. As a result, there is a severe shortage of teachers, which has led to suspending advanced mathematics and science streams in some high schools or assigning unqualified teachers to teach the courses. This is not only a formidable challenge, but could also be a golden opportunity – in the coming years, the Israeli education system will be laying the foundation for the next generation of mathematics and science teachers. This is an opportunity to make certain that the “best and the brightest” join the profession, and ensure they receive the finest training and guidance possible.

The government recognizes the need for more mathematics and science teachers and in recent years has implemented efforts to find, screen, train, and place them, but a number of its initial attempts were only partly successful. The government and the foundation have recognized the need to choose only the best candidates who are most suited for the job, to carry out in-school clinical training led by veteran teachers, to assure appropriate placement with close supervision during the initial years of teaching, and to make sure the new teachers integrate well with the veteran teaching staff.

Over the last year, the foundation has been working in conjunction with the Ministry of Education and teacher training colleges to establish prestigious in-school training programs under the close supervision of master teachers. Until now, four such programs have been launched in teacher training colleges (Levinsky, Oranim, Beit Berl, Kibbutzim College), and during the 2014-5 school year, 94 new teachers and 20 graduates are already working as teachers in the education system. Recently, the four programs have begun collaborating as a professional network, and representatives have even traveled together on a study trip to the United States to learn first-hand from similar working models. Moreover, the foundation has helped establish a placement service for mathematics and science teachers, which is now taking its first steps.

#### **QUESTIONS FOR DISCUSSION:**

1. Have clinical training programs been able to recruit and screen potential teachers with outstanding capabilities; what are the screening criteria, and what lessons have been learned so far from the recruiting process?
2. How does the content of training programs equip new teachers with assessment and evaluation skills and mastery of a variety of teaching methods that will enable them to adapt their teaching to the abilities of individual students in their classes?
3. What are the challenges in placing graduates, what lessons have been learned, and how can we support and guide new teachers in an effort to ensure they integrate and persevere in the profession?

4. How can the training programs collaborate with one another; share information, experiences, and even resources; and how can they influence the regular teacher training courses in their colleges, both separately and together?

As **background** to the discussion, we recommend reading the draft of the 2014 [Updated Strategic Roadmap](#), (pp 51-66).

#### **PARTICIPANTS**

PROF. TAMAR **ARIAV**, President, Beit Berl Academic College

MS. SHARON **FRENKEL**, Teacher Placement, Mitam

MR. NOAH **GRINFELD**, Ministry of Education

MR. GADI **LIDROR**, Mathematics teacher, graduate of 'Delta' program, Levinsky College of Education

DR. TIRUWORK **MULAT**, Levinsky College of Education

DR. TALLI **NACHLIELI**, Levinsky College of Education

## **COLLECTIVE IMPACT**

How can a wide **Collective Impact** Initiative on Science Education Transform itself into a Successful Vehicle at Scale?

*19 NOVEMBER 2014, 17:00 – 18:15, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

As a philanthropic foundation whose activities focus only on teachers and helping to improve the quality of teaching, it was clear to us from the beginning that we must work in close cooperation with other players in the field: government, academia, industry, philanthropy and the civic sector. We realize that without close coordination, a clear vision, and common goals and methods of measuring success, our activities would meet many obstacles and results would be limited.

Therefore, in cooperation with the Rashi Foundation and Intel Israel, we asked "Sheatufim," a non-profit organization experienced in cross-sector coordination, to begin a shared process along an innovative collaborative path to solving social issues, known as Collective Impact. This approach is based on the recognition that solving complex social issues requires cooperation between diverse players and that no single organization is able to move the needle alone.

Together we founded a national initiative on STEM Excellence called "5 x 2", which set a shared goal of two-fold improvement in excellence in mathematics and science studies during the next decade. When the process was ripe, the Ministry of Education decided to take a significant step forward and declared it a national program under the name: "Mathematics First." In this program, which adopted the goals of the joint initiative, 100 schools receive an addition of 15 weekly hours from the government with which they can consume complementary intervention programs offered by the civic organizations, which participate in the initiative.

### **QUESTIONS FOR DISCUSSION:**

1. Which performance indicators for "Mathematics and Science Education" in Israel require monitoring by the initiative and what method should be used to discover if advances have been made nationally?
2. What components need to be strengthened or are missing from the initiative in order to improve chances for long-term success?
3. How can the foundation integrate efforts to advance quality teaching within the initiative? What are the opportunities and what are the limitations?

As **background** to the discussion, we recommend reading the following:

- A. The draft of the 2014 [Updated Strategic Roadmap](#), (pp. 51-66)
- B. John Kania and Mark Kramer, [Collective Impact](#), *Stanford Social Innovation Review*, Winter 2011.

### **PARTICIPANTS**

MS. BELLA **ABRAHAMS**, Corporate Affairs Director, Intel  
MR. SHAHAR **BAR-OR**, CEO Sandisk

MS. GILA **BEN-HAR**, Director, CET

MR. MOHANA **FARAS**, Head of the National Program "Mathematics First," Ministry of Education

MS. INBAR **HURVITZ**, Head of "5 x 2", Sheatufim

MS. GALIT **LEVY**, Government Affairs Manager, Intel Israel

MR. MIKI **NEVO**, Senior VP, Research and Development, Rashi Foundation



## **PARTNERSHIPS WITH LOCAL GOVERNMENTS**

### **What are the Opportunities and Challenges of Partnering with Municipalities to Improve City-wide Science Instruction?**

*19 NOVEMBER 2014, 18:45 – 20:45, DINNER, TORO RESTAURANT, MISHKENOT SHA'ANANIM*

The Trump Foundation would like to consider possibility of partnering with local governments in order to demonstrate how quality teaching can contribute to a lasting increase in the number of students who choose, persevere, and successfully complete the advanced 5-unit matriculation majors in mathematics and the sciences.

We assume that it would be appropriate and effective if we collaborate with a select group of municipalities in order to introduce professional systems to support quality teaching in their schools, using programs and tools the foundation has helped develop, including: professional communities, diagnostic tools, video analysis, and reliance on master teachers.

Moreover, the foundation strives to identify those municipalities that see eye-to-eye with it, who have defined the same priorities, and are already investing significant resources to this end. The foundation believes its role is to support the process at its outset, but that full responsibility for the program should be with the municipality, which must provide almost all of the resources required.

In order to examine the feasibility and the conditions required for such partnerships, we asked attorney Moshe ('Moish') Levy, former deputy mayor of Modi'in and responsible for the city's educational portfolio, to study the subject, talk to relevant players, and present his recommendations in a report to the foundation.

Simultaneously, the foundation began a number of pilot partnerships with local governments. Some two years ago, the foundation collaborated with the City of Ashdod on its program to expand the circle of excellence in mathematics and physics. Following the Ashdod model, the foundation recently began a similar program with the City of Haifa.

During this meeting, which will be held over dinner, we will discuss Levy's report and its reviews, as well as hear from the pilot programs in Ashdod and Haifa. This discussion will hopefully allow the Council's members to provide their insights on the foundation's assumptions, and to recommend if and how we may want to proceed with this initiative.

#### **QUESTIONS FOR DISCUSSION:**

1. Has the foundation clearly and persuasively defined the goals of partnerships it wishes to form with local governments? Are those objectives achievable, or do they need to be clarified and improved?
2. Will the compromises required from the foundation, described in Mr. Levy's report, and responses to them enable the foundation to maintain its philanthropic approach? Where should it draw its red lines?
3. What can be learned from the pilot programs in Ashdod and Haifa? Are they in line with the recommendations in the report or do they contradict them? How should the foundation operate as a result?

As **background** to the discussion, we recommend reading the following:

- c. Draft of the 2014 [Updated Strategic Roadmap](#), (pp. 51-66);
- d. [Mr. Levy's report](#) and its reviews (pp. 27-33).

#### **PARTICIPANTS**

MR. SHAI **ABUCHATZEIRA**, Deputy Mayor and Head of Education, Haifa Municipality

MR. ZE'EV **BIELSKI**, Mayor of the City of Ra'anana

MR. MICHAEL **BITON**, Head of the Yerucham City Council

MR. YEHUDA **FRANKEL**, Head of Education Portfolio, Ashdod Municipality

MS. MICHAL **HIRESH-NEGRI**, Director of Ra'anana Municipality

MR. AVI **KAMINSKI**, Director of Education Department, Ashkelon Municipality

MS. DAFNA **LEV**, Director of Education, Culture and Sport Department, Tel Aviv Municipality

MR. MOSHE (MOISHE) **LEVY**, former Deputy Mayor of Modi'in-Maccabim-Re'ut

MS. LIMOR **RUBIN**, Director, Ruderman-JFNA Center for Israel-American Jewish Relations

September, 2014

**PHILANTHROPIC PARTNERSHIPS WITH MUNICIPALITIES**  
*Advancing Quality Teaching in Secondary Schools to Expand the Circle of Excellence  
in Mathematics and the Sciences*

**REPORT AND RECOMMENATIONS\***

**BACKGROUND**

The goal of the Trump Foundation is to assist the educational system in developing and assimilating quality teaching in mathematics and the sciences in secondary schools with the aim of increasing the number of students who choose, persevere, and successfully complete advanced (five-unit) matriculation tracks in these subjects.

In its [strategic roadmap](#), the foundation wrote that recruitment of talented people to teaching, effectively training them to be teachers, and developing clinical teaching skills among teachers are all necessary elements of success. However, without a support network or the concerted and coordinated action of all those involved in education in the field, it is unrealistic to expect quality education to take root.

Therefore, at this junction, the foundation is investigating and experimenting with working with various levels of the educational system, forming partnerships with specific schools, cities, school networks, school districts, and nation-wide projects. In this way, it is attempting to discover what support networks are necessary on the ground, how quality teaching seeps down and is adopted, and what types of collaboration are needed.

One of the Foundation's first working assumptions was that it must seriously examine the possibility of partnering with select cities. There are two reasons for this: local municipalities are responsible for secondary schools and the shortage of teachers and science laboratories naturally leads to sharing resources at the local level.

To help the foundation formulate the most appropriate way to cooperate with local government, it engaged the services of attorney Moshe ('Moish') Levy to make an in-depth study of the issue and submit a report and his recommendations. Until recently, Levy served as Deputy Mayor of the City of Modi'in Maccabim-Re'ut, member of the city council responsible for the city's education portfolio.

For the detailed report in Hebrew, please visit [here](#)

\* We would like to extend our heartfelt thanks to Ms. Limor Rubin, who skillfully worked closely with Mr. Levy and was instrumental in preparing the report.

**PRIMARY RECOMMENDATIONS**

1. Selecting which municipalities to partner with must be based on thorough investigation of each city's potential for extending excellence, with emphasis on its educational and administrative capabilities, its commitment to the task, its reputation for collaboration, the seriousness of its intentions, and its financial strength.
2. As a spend-down foundation that sees its role as catalyst rather than implementer, the foundation must take appropriate action to ensure that the

municipality will give the program priority status, take upon itself the responsibility of planning and implementing the program, and build the professional and budgetary infrastructures set out in its agreement with the foundation so that the program will continue to function many years after the partnership comes to an end.

3. The foundation must strive to differentiate its partnerships with cities from the general perception of philanthropic partnerships – as limited to financial backing or providing services and implementing programs for municipalities. Financial-based partnerships or implementation of programs for municipalities are by nature short-term, specific, and have limited impact.
4. The foundation staff must thoroughly study how local municipalities work, how their education departments function, and the interrelationships between schools and the Ministry of Education. In general, they must develop an understanding of the singularity and complexity of this field.
5. The recommended model for partnership is one that entails a ‘common mission’ and requires that the municipality and the foundation have similar worldviews. In order to reach this alignment, the foundation must be ready to accept a number of compromises and concessions that will pave the way to creating such collaboration:
  - A. It will be impossible to form collaborations limited to the foundation’s focus on quality teaching in mathematics and the sciences in the advanced five-unit matriculation track in secondary schools. This is too narrow a scope for local municipalities, which must deal with math and science education in a wider context;
  - B. Partnerships cannot be defined merely as the means for importing, experimenting with, and integrating programs the foundation has helped develop that are now ready for implementation. Local municipalities will refuse to serve merely as convenient places to conduct field experiments and do not consider themselves experimental laboratories;
  - C. The foundation will not be able to dictate to the municipality which components of the program to adopt, but must carry out a dialogue in which this is determined together. During this dialogue the municipalities will decide which components they are interested in acquiring from the foundation or from other entities and which they would rather develop themselves based on their own capabilities;
  - D. Collaboration with the foundation cannot be limited only to financing the development of components or acquiring the foundation’s programs. Financing should come equally from both parties (matching funds) and pay for a common basket of activities, both regular and special, both inside and outside the foundation’s focus, as mentioned in clauses (A) through (C);
  - E. The municipality cannot be expected to be a full partner in financing from the beginning; therefore, during the initial years, the foundation must be ready to invest more than the municipality but demand that during next five years the municipality’s proportion will gradually increase until it becomes the sole contributor.
6. Planning the collaboration should be carried out in cooperation, bearing in mind the special character, needs, and capabilities of each municipality. The

foundation should be willing to tailor each partnership to fit the municipality. The various municipality officials and the Ministry of Education should be included in the planning process.

7. An essential condition for success of the joint program lies in selecting a senior figure in the organizational hierarchy of the municipality to serve as integrator. This will provide the substantive leadership required to implement the program. Selecting the integrator and deciding on his or her conditions of employment will be conducted jointly by the municipality and the foundation.
8. In order to ensure the effectiveness of the entire process and its sustainability, the foundation should consider forming an intermediary organization or joining forces with an existing one to represent the foundation in its dealings vis-à-vis the municipalities. Such an organization would initiate the pooling of knowledge and resources among the municipalities and could be availed upon for its expertise in the field of education.
9. The performance and impact of the entire process should be continually monitored and evaluated. Well in advance, the foundation, together with the local municipalities, should decide how to measure the success of the program. An entity qualified in assessment and evaluation should be recruited early in the planning stages to guide the process.

## REVIEW

### HEAD OF A MUNICIPAL COUNCIL IN A SMALL PERIPHERY TOWN

For municipalities, the formal education system is inseparable from the informal education system (community centers) and their responsibility for the welfare of its citizens. Lack of communication between these systems results in inferior education for its children. Therefore, unifying them under one person is a prerequisite to realizing a comprehensive vision of education based on synchronization and synergy.

Budgetary partnerships with municipalities following the proposed model of matching funds are problematic, especially since municipalities usually do not enjoy budgetary surpluses. There are two possibilities for the foundation: it can either come to an understanding with the national government that it will cover the 'municipalities' investment portion, or it should count the municipalities' regular budget allocations for education towards its matching funds. In any case, it would be unreasonable to expect the municipalities to invest in the programs from their own pockets. Moreover, sustainability will only be possible if the programs are operated by local organizations with local leadership.

### FORMER HEAD OF ADMINISTRATION OF A LARGE CITY

The report is too general and does not present operative recommendations; it uses fancy words that are sometimes too forceful. In the section dealing with the educational building blocks essential for success, one would expect to have seen a practical working model, including implications for manpower, a budget, success measures, and timetables.

The strategy of the foundation is neither presented nor explained in the report. The Foundation maintains that investment in quality teaching will contribute to expanding the circle of students completing the advanced five-unit matriculation track in mathematics and the sciences in high school, but this assertion is not explained in the report and its implications are not discussed. What lessons has the foundation learned during its three years of operation that are relevant to partnerships with the municipalities? What are the conditions and what are the challenges? These are all missing from the report.

There is no reference to online study, to the Pisga Centers for Teacher Development, to special groups of students, or on which sources the report is based, besides personal experience and opinions. The "project" and "pilot" terminology that appears in the report is inconsistent with its recommendation for a continuing and sustainable process.

The municipality is a pivotal factor, but the report seldom refers to the Ministry of Education. The foundation should understand that the Ministry of Education has a powerful influence over what takes place in schools, and that any process that does not include the Ministry will meet with difficulties in the future. The report lacks an analysis, or even an initial mapping, of the governmental bodies and forces within which the local authorities exist. Without it, it is impossible to understand how the broader system works and influences the municipalities.

Municipalities have a lot of influence on both educational continuity, which lasts from birth to academia, and chronological continuity, which lasts from morning until evening.

Informal education is not mentioned in the report at all, but is an essential educational channel for the municipalities.

The criteria for selecting which municipalities to work with direct the project only to the strong ones. For example, financial strength and a municipality's ability to fund the program limit the relevant municipalities almost from the start. Is this the mandate of the foundation, or is it obligated to operate in the periphery?

#### SENIOR OFFICIAL IN THE EDUCATION DEPARTMENT OF LOCAL GOVERNMENTS

The report is impressive in its seriousness, scope, and thoroughness. However, the criteria to be used for choosing municipalities impose serious limitations on the number of potential municipalities. In fact, they are directed at strong municipalities that have at least three schools not connected to a school network and a thousand or more students.

The number of demands and tasks the municipalities must fulfill according to the report is intimidating and discouraging, and it is unlikely anyone will choose to participate. The recommendation to create a network of municipalities or a cluster of regional municipalities is impractical because the chance of that happening is minute.

#### SENIOR PHYSICS TEACHER WHO LEADS PROJECTS IN SEVERAL CITIES

It is a good report and I agree with most of it. However, until I read it, I had understood the Trump Foundation's strategy differently. I understood that each of your channels of operation was independent – that you attract and train new teachers, improve instruction skills among veteran teachers, and work jointly with municipalities along three independent lines. Now I understand for the first time that you are working to combine these activities under the same vision and theory of change. I must confess that the connection is not clear to me, because the circle of excellence in a city can be expanded even without involvement in teaching or the quality of instruction. For example, it would be possible to follow the lead of the Ashdod initiative, and at the beginning only set a goal and build a system to monitor and follow-up on students in order to see if they finished the courses. I believe that your position should be that quality teaching is essential to expanding the circle of excellence systemically and sustainably, but is not a sufficient condition for reaching that goal.

I must say that the above comment is for you, and is not relevant to the discussion about municipalities. It brings up however a basic question that you must ask yourselves: Whose agenda is partnership with municipalities meant to serve? The foundation's? The municipalities'? Advancing scientific education? Advancing excellence? Advancing quality teaching?

You must understand that advancing quality teaching is not a stand-alone agenda for the municipalities. Most of them do not have an educational agenda; they contract out their schools to school networks and make do with being a conduit for financing and for maintenance tasks. The available budgets of cities' educational departments are less than ¼ %, and after covering their everyday costs not much is left over. A city with an educational agenda is rare because it requires the city make a decision and invest special efforts. Under such circumstances, the agenda is extremely fragile and must be continually maintained. Compromises are frequently made because of politics and power struggles. Besides that, from the standpoint of the city, the foundation is only one of many partners, neither it nor its projects are carved in stone. On the other hand, the

city is the owner of high schools and that is important. The city is flexible when compared to the Ministry of Education, which I recommend the foundation ignore. Therefore, I recommend that the foundation work with the municipalities.

Nonetheless, I am convinced that the foundation should not work directly with them. It should establish an organization to specialize in that relation and it should support it. The reason for this is that it is 'cleaner' and more sustainable as such an organization could serve additional cities and funders.

#### HEAD OF IMPLEMENTING EXCELLENCE PROGRAM IN PILOT CITY

Building a partnership with a city must take into account a period of mutual adjustment, manifested by selecting the tools and methods to be used, with all the participants collaborating on selection, planning, and decision-making. In order to increase the chances of a thorough integration of the program, it is essential to reach a state of affairs in which the participants feel they have a stake in the change. I cannot visualize a situation in which the municipality decides on milestones and imposes them on school principals. Therefore, it is impossible to speak only about one model, but rather about several models fitting different schools. Principals should be allowed to choose from a package of programs relevant to a core set of issues that need to be addressed.

The report does not refer to the foundation's grantees that develop the programs, methods, and instruments as being in partnership with the municipalities, and fails to define their place and role in the process of change in the municipality. Program developers usually develop their approaches 'top down,' and expect those in the field to execute them accordingly, but that is an ineffective approach. It would be advisable to integrate a 'bottom up' approach that would consider the teachers and other educators in the field partners in development, to adopt a more open and flexible approach that would allow adapting the programs to the special conditions in each municipality.

The report recommends the foundation select municipalities for a process in which they decide the educational agenda and take responsibility for the professional development of their teachers. However, it should be remembered that these are the traditional roles of the central government, the Ministry of Education's headquarters and districts. The central government leads the national educational agenda. Far-reaching programs, such as 'Meaningful Learning,' 'The Telecommunications Project,' 'Next Generation Scientists-Technologists' and 'Mathematics First,' which have a direct impact on schools' agendas, are derived from this national agenda. Therefore, you must identify the municipalities that, in spite of this situation, have taken upon themselves a leadership role focusing on advancing practice. You should also be prepared that as a result there would be deep and inherent tension between them and the central government. The foundation must create understandings with the central government so it will grant the municipalities the necessary freedom to function.

Moreover, there must be cooperation with the teachers' unions and with the training procedures for senior-level personnel as required by wage agreements. These agreements require teachers to undergo in-service training in colleges or universities according to a syllabus that has little to do with professional development relying on practical knowledge.

Regarding funding, despite the lavish words in the report on 'major systemic change', what is actually proposed is an incremental intervention program. If this process will always require raising additional resources besides what the municipality in any case invests in education, the chances of the program surviving after the foundation's



involvement ends is doubtful. In my opinion, there is no way to guarantee permanent funding without changing the present financial structure of Israel's education system (which has the central government channeling funding for schools through the municipalities) and recognizing the need to shift more responsibility to the municipalities.

#### DIRECTOR OF AN ORGANIZATION THAT MEDIATES A MUNICIPAL JEWISH STUDIES INTERVENTION PROGRAM

A mayor's success is evaluated, amongst other factors, on achievements in education and s/he is regarded as accountable for this field by his or her constituency. However, in my opinion, it is not imperative that the Mayor prioritize Science Education as often it is more important that the municipality's senior management regard it as being of high priority. In any case, the foundation should be sensitive to this and enter into partnership with minimal ego, allowing the local authority to receive all the credit. The foundation must clarify its exact financial commitment in advance, as well an accurate period of commitment. Nevertheless, cities tend to forget that philanthropic funding is short term and often they do not live up to their obligation to undertake financing.

In my opinion, as part of the selection process, the foundation must determine whether there is anyone in the municipality who will undertake the process seriously and who is capable of moving things forward. This individual will be the point person to work with on the project and therefore a previously designated individual should not necessarily be the one appointed. I feel that the report minimizes the importance of the quality of character and professionalism of the municipality's Director of Education. On weighing up which local authority to partner with, I recommend that the foundation relate to this issue as significant. The report does not refer to the Director of the Department of Secondary School Education, whom I think is a very important figure in the municipal education system and certainly in this partnership.

It is worth noting that the report presents two possible partnership plans: The foundation partners directly with the municipality or with an organization engaged by the foundation to work with the municipality. For the local authority there is a significant difference between the two options and the partnership model should be derived from them as well. I think that this is a decision that the foundation must make prior to initiating operation and should not be delayed until later in the process. In my experience, contrary to the report's recommendation, if the foundation funding is channeled through an operating body, its ability to maintain control over the process is retained. However in any case, since we are dealing with the field of Science Education, on which there is broad consensus, I believe the authorities would be willing to cooperate.

The report does not present a financial model, just general principles and this is not sufficient. What is the cost for the school? What is the municipality's expense relative to size? Without these figures the local authority cannot evaluate and decide whether it can make the budgetary commitment. Does the financial model take partnership with and funding from the Ministry of Education into account, at the outset or later on? In any case, it is important to understand that it is very challenging and often unwise to insist on reaching a multi-year agreement with the local authority at the outset. It may create legal difficulties, which can become more significant the less prior experience the municipality has with working with the foundation.

## **STRATEGIC MESSAGES AND COMMUNICATIONS**

How Should the Foundation Articulate its **Strategic Messages** to its Partners and Target Audiences?

*20 NOVEMBER 2014, 08:45 – 10:15, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

Today, the Trump foundation speaks separately in two distinct languages: one professional and one public. Because of that, the foundation wears two different hats, speaks in distinct voices, and uses distinctive branding.

In its professional language, the foundation addresses the educational field, researchers and decision-makers, including foundation grant recipients and its partners in the education system. The lexicon of this language includes terminology such as “clinical teaching,” “diagnostic instruments,” “professional teaching communities,” “instructional coaching,” and “support networks.” The foundation makes use of its professional language in its documentation, [website](#), [newsletter](#), library, professional journals and conferences and in meetings with grant recipients and partners.

In its public language, the foundation addresses potential teaching candidates and their immediate environment, parents, and the general public. The lexicon of this language is simpler and more accessible, and includes slogans such as “a good teacher makes all the difference”; “an outstanding matriculation certificate opens doors”; “mathematics and the sciences are the key to solving the problems of the world, the country, and society”; “education in Israel is changing course.” The foundation uses its public language [in its social media program](#), [“It’s Time for Education”](#) and [its magazine; its website and events concerning “Teachers Day”](#); in radio and television interviews; and in articles in the general press.

### **QUESTIONS FOR DISCUSSION:**

1. Are the foundation’s messages convincing and how well are they transmitted to the various communities, both in the professional and the public arenas?
2. Does the foundation’s decision to convey a number of messages (expanding excellence in math and science/quality teaching) and to simultaneously speak in several languages portend a good chance for success?
3. If not, should the foundation try to create a more precise message and a unified language that would be meaningful both to professionals and the public, with clear congruence between them? If so, how?

As **background** to the discussion, we recommend reading the following:

- A. Draft of the 2014 [Updated Strategic Roadmap](#) (pp. 51-66);
- B. Perspectives on the foundation's messages (pp. 35-36).

### **PARTICIPANTS**

MS. TAL **ALEXANDROVICH-SEGEV**, Ben Horin & Alexandrovich Communication

MR. ZE'EV **KRAKOVER**, Israel Center for Excellence through Education

VERED **MOSENZON**, Poet, Author and Copywriter

DR. Yael **NAOT-OFARIM**, Kibbutzim College

KAREN **TAL**, Director, Tovanot B'Hinuch

## PERSPECTIVES ON THE FOUNDATION'S MESSAGES

### EXCERPTS FROM THE INSIGHTS REPORT OF THE 2012 ADVISORY COUNCIL MEETING

‘What is missing is a shared and inspirational vision that will motivate organizations, education professionals, and the general public to act together. In the absence of such a vision and an ideology that inspires identification, it is unrealistic to expect that a common language or clear agreement about goals and measures of success will develop among the Israeli bodies dealing with the issue. The vision must be phrased in such a way that it will generate awareness of the necessity and urgency involved, produce a clear understanding of the issue, and at the same time encourage waves of identification and enlistment to the cause.

The foundation must delve into and precisely define what it means by the phrases ‘excellence in teaching’ and ‘quality teaching’ at the classroom and school levels, while specifically addressing ‘quality teaching’ in mathematics and the sciences.’

### EXCERPTS FROM A SPECIAL PUBLIC OPINION POLL CONDUCTED IN PREPARATION FOR THIS DISCUSSION (AUGUST, 2014)

Mathematics, science, and technology studies are considered vitally important, more so than other subjects, among both Israeli adults and adolescents.

More than 80% of adolescents and adults indicated that studying math, science, and technology is important if Israel is to remain on the forefront of research, science, medicine, and technology in the world, and that studying these subjects in high school can open doors to a better higher education future and more prestigious professions in the job market.

Eighty-six percent of adolescents who were asked indicated that science and technology studies are important because they give young people a relative advantage when they apply to prestigious military technological units or sought-after courses of study in higher education. This is a motivating factor when choosing to study them in high school.

### EXCERPTS FROM A PUBLIC OPINION POLL AND FOCUS GROUPS MADE UP OF POTENTIAL CANDIDATES FOR TEACHING MATHEMATICS AND THE SCIENCES

When asked if they would seriously consider changing careers to teaching math and the sciences in high school, 8.6% of individuals with relevant academic degrees responded ‘definitely yes,’ on the condition that they would be offered the opportunity for quality teacher training. A considerable number of them were men over the age of 35 who live in the center of the country or in the north.

Their main motivations for choosing to teach relate to their passion for the sciences, their desire to influence young people to study these subjects, wanting challenging work with a social mission, employment security and the opportunity to balance work and family. They remarked that their decision whether or not to change careers is also influenced by the opinion of family members and friends.

The potential candidates said that their information consumption mainly comes from primetime television news broadcasts and documentary programs that present personal stories. They mentioned the personal stories of teachers and their challenging endeavors as having a strong influence on their decision to join the teaching profession. In addition, they said that they read Internet news sites frequently but superficially and the weekend newspapers more thoroughly. They listened to the morning current event shows on radio and are passive information consumers on social networks.

## CHALLENGES AND OBSTACLES

What are the **Challenges and Obstacles** Created when the Foundation's Strategy and Programs Meet with Educational Realities in the Field?

*20 NOVEMBER 2014, 10:30-12:00, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

In order to realize its Strategic Roadmap, the foundation has approved 95 programs, which are executed in close cooperation with and reliance on the educational organizations that have planned them. Each program has outlined its goals, measures of success, milestones, and timetables; special steering committees have been established for some of them. The foundation staff are in constant contact with program heads; they promote sharing and partnerships among the organizations; and provide assistance in overcoming challenges and obstacles. This session will explore these challenges, which are a natural side effect when plans meet reality on the ground.

Participating in this session are the heads of five programs that receive support from the foundation (see a summary of the programs on pp. 38-39). They were asked to present the challenges they face in their work with students, teachers, schools, local governments, school networks, school districts, and the Ministry of Education. In addition, obstacles encountered within their organizations will be discussed, as well as problems they have experienced in working with the foundation.

### QUESTIONS FOR DISCUSSION:

1. In the transition from planning to implementation, what challenges and obstacles have arisen and what preparations have been made to overcome them? Who needs to be recruited to help, and what kind of help is needed?
2. What happens when there is a sizable gap between plan and implementation that significantly impacts quality, scope, method, budget, or timetable?
3. In all of these scenarios, what is the role of the foundation, what should be the working relationship between the foundation and the program heads, and how should the foundation react to changes that originate from on-the-ground experiences?
4. How can the foundation promote knowledge sharing and cooperation among its programs and partners that would direct attention to coping with challenges and obstacles together and providing mutual aid in finding solutions to them?

As **background** to the discussion, we recommend reading the following:

- A. Draft of [Updated Strategic Roadmap 2014](#) (pp. 51-66)
- B. Summary of the programs run by the session participants (pp. 38-39).

### PARTICIPANTS

DR. ESTER **BAGNO**, The Weizmann Institute of Science

MS. ADA **CHEN**, Virtual High School, CET

MS. DAFNA **DOR**, Shiur Acher

DR. MOR **DESHEN**, Darca Schools (formerly Amit)

PROF. ATARA **SHRIKI**, Oranim Academic College of Education

DR DAFNA **RAVIV**, Virtual High School, CET

## PROGRAMS PARTICIPATING IN THE SESSION

### SHIUR B'YACHAD

**Organization:** Shiur Acher

**Grant amount:** NIS 1,479,000

**Length of grant:** 3 years beginning March 2013

The *Shiur B'Yahad* program teams teaching assistants – volunteers from hi-tech and industry – with classroom teachers during mathematics and science lessons, to help them assess student capabilities and adapt teaching to each individual student in high school. The program is currently implemented in some 40 schools; involving 150 volunteers two hours a week. The program set as its goal to develop an operating model that could be maintained and expanded after the philanthropic funding ends.

[Shiur Acher](#) was founded in 2002 and operates a network of more than 2,600 volunteers from 200 businesses and organizations to teach enrichment courses in schools.

### VIRTUAL HIGH SCHOOL

**Organization:** The Centre for Educational Technology

**Grant amount:** 9,393,000 NIS

**Grant term:** Four years beginning December 2011

The Centre for Educational Technology's virtual high school is an alternative for students who want to study advanced 5-unit mathematics and physics courses but attend schools that do not offer those subjects. The program provides online math and physics courses for high school students, with approximately 500 students from 80 schools from all over the country currently enrolled. The foundation funds the development of the program, but operating expenses are allocated by the Ministry of Education.

[The Centre for Educational Technology](#) is a long-established and experienced non-profit organization that develops innovative curriculums for the Israeli education system.

### REGIONAL LEARNING COMMUNITIES FOR PHYSICS TEACHERS

**Organization:** Weizmann Institute of Science

**Grant Amount:** 2,573,500 NIS

**Grant term:** Three years beginning December 2011

Led by a team of physics master teachers, 11 learning communities for physics teachers are currently active around the country, meeting once every two weeks. In the communities, teachers share their observations about the teaching and learning that take place in their classrooms. They practice teaching methods that will help their students perform well in their studies and prevent them from dropping out. The leaders of the communities also meet once every two weeks to develop content that will qualify them as instructional coaches.

## PEDAGOGICAL SUPPORT FOR MATHEMATICS AND PHYSICS IN FIVE SCHOOLS

**Organization:** Amit School Network

**Grant amount:** 2,250,000 NIS

**Grant term:** Three years beginning June 2012

The Amit School network, with the assistance of Prof. Anthony Bryk, has developed a model for school-based support for improving the achievements of high school students in mathematics and physics. The program is being implemented in 5 non-selective comprehensive schools in the network. It focuses on implementing a coherent instructional system, improving the quality of teaching, collaboration between parents and teachers, student-centered learning, and strong school leadership.

[Amit](#) is a long-established school network of national-religious public schools. It includes 90 schools from around the country,

## TEACHER RESIDENCY PROGRAM FOR 5-UNIT MATHEMATICS TEACHING

**The Organization:** Oranim Academic College of Education

**Grant amount:** NIS 1,760,000

**Grant Term:** 5 years beginning September 2013

The project's teacher training program for mathematics selects outstanding candidates in a meticulous and competitive screening process with high entry requirements. Most of the training takes place on-site at the Reali School in Haifa and focuses on teaching practices with the close supervision of a master teacher. The training period is followed by a two-year follow-up program involving in-school support. The second cohort began recently, intended to train 50 new teachers within 5 years.

[The Oranim Academic College of Education](#) is one of the oldest and largest colleges in Israel. Located in the north, it trains over 5,000 teachers each year.

### **STRATEGIC FOCUS**

Should the Foundation Remain **Strategically focused** or should it widen its Scope in order to improve its Prospects for Success?

*20 NOVEMBER 2014, 13:15-14:15, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

The primary working premise of the Trump Foundation is that the potential for excellence in mathematics and the sciences can be found in all sectors of the Israeli population: in the center of the country and in the periphery, among Jews and Arabs, among the secular and the religiously observant, among female and male students alike. In light of this premise, leaders of programs we support exercise their discretion to determine the target audience, taking into account demand, priorities, and opportunities. Nonetheless, we are aware that there are exceptions that may require special consideration and adaptation.

For example:

- A. Fewer girls than boys choose to major in physics, computer science, and electronics; fewer boys than girls study chemistry and biology;
- B. Students from the ultra-orthodox sector study very little mathematics and science in elementary school, and rarely study these subjects in high school;
- C. In state-run religious schools, the number of students studying mathematics and science is relatively low (except for biology). The disparity is especially prominent in chemistry;
- D. In schools in the Arab sector, despite low scores on the PISA exams, large numbers of students major in mathematics and science in high school, especially chemistry (18%). Girls are heavily represented in those subjects.
- E. Advanced mathematics and science courses are studied more north of the Tel Aviv line and relatively less south of the Jerusalem line.

The second premise of the foundation is that many students enroll in advanced mathematics and science courses in tenth grade, but then a large percentage (about 30%) dropout; that is to say, a considerable number of students enter high school wanting to study these subjects but become discouraged. For this reason the foundation invests most of its efforts towards improving teaching in upper secondary grades. On the other hand, even though conditions are not the same, intervention in middle schools could increase the quantity and quality of students who go on to upper secondary majors. Following a discussion during the 2012 Advisory Council, where the subject was raised, the foundation began to operate deliberately but cautiously in middle schools. In addition, there is a group of students that has been ignored until now – those who dropped out of advanced major, but as they begin to look ahead to college are searching for ways to return and study for the exams.

The third premise is that the foundation must concentrate on disciplines that in recent years have experienced a decrease in enrollment, that is, mathematics and physics. However, there are good reasons to consider supporting the study of chemistry as well, which in the Jewish sector is experiencing a decline; and/or expanding to middle school



science courses - the source of students who go on to advanced high school courses - which are in need of revamping and re-focusing; or even addressing the emerging subject of cyber studies, which is becoming more popular in the education system.

The fourth premise of the foundation is that investing in teachers and teaching is a significant lever for effecting sustainable change. Yet, it is clear that without uniting with additional elements, it will be difficult to realize our goals systemically and at scale. Following discussions in the 2012 Advisory Council, the foundation is making efforts to promote dialogue and coordination among all the bodies that deal with the issue through the Initiative to Strengthen Scientific Education ("5 x 2") and through programs developed by municipalities and schools.

### **QUESTIONS FOR DISCUSSION**

1. Should the foundation develop special programs specifically for diverse sectors and populations, and if so, for which ones and how?
2. Should the foundation maintain its present focus or expand it; if it expands it, in what direction and how?

As **background** to the discussion, we recommend reading the draft of the [Updated Strategic Roadmap](#) 2014 (pp. 51-66)

### **PARTICIPANTS**

MR. SAGI **BAR**, National Cyber Initiative

PROF. YAARA **BAR-ON**, President, Oranim Academic College

MR. AVIAD **FRIEDMAN**, Chairman of the Israel Association of Communities Centers

DR. ARIEL **HEIMANN**, Director, the Davidson Institute for Scientific Education

MR. ARIEL **LEVY**, Head of the Pedagogic Administration, Ministry of Education

MR. SHMUEL **SHETACH**, Director, Ne'emanei Torah V'avodah

MR. SUHIL **SHARIF**, Supervisor of Mathematics Education in Arab Sector Schools,  
Ministry of Education

## MEASUREMENT AND ASSESSMENT

Towards an **End-to-End Review** of the Foundation's activity – What Indicators, Measures and Activities should be Documented and Monitored?

*20 NOVEMBER 2014, 14:30-16:00, DJANOGLY HALL, MISHKENOT SHA'ANANIM*

The goal of the foundation is to assist the education system in expanding the circle of excellence in mathematics and the sciences, resulting in a significant increase in the number of high school students who choose, persevere, and successfully complete the advanced 5-unit matriculation exam courses for mathematics, physics and chemistry. The foundation resolved to focus its efforts on quality teaching in those disciplines in high schools, with emphasis on recruiting talented people to the profession and training them, nurturing the clinical skills of teachers, and strengthening the ground support systems for quality teaching at scale.

In 2011, the foundation's Strategic Roadmap delineated its planned activities for the next ten years (2012-2021) and at the halfway point, that is, in late 2016, the foundation will carry out an end-to-end review to scrutinize what progress has been made and plan mid-course corrections. The aim of this session is to help the foundation prepare for the review in advance by identifying important indicators for documentation and monitoring, defining methods and tools, and determining which areas are appropriate for 'base-line' measurement that will help us recognize trends.

The foundation's activities can be measured and assessed on several levels, among them:

- A. **Inputs.** How the money was distributed among the various fields of reference, how many grants were awarded, how many partnerships were entered into, etc. Moreover, it is also possible to evaluate the foundation staff regarding their work load, professionalism, service orientation, etc.
- B. **Outputs.** Direct measurement of activities supported by the foundation. For example, how many new teachers were trained, how many of them received pedagogic guidance, used video recordings to improve their practice, and joined teacher communities.
- C. **Direct Outcomes.** Measuring the success of each project in advancing the goals of the foundation. For example, how many teachers were employed and remained in the profession, how many new classes of advanced majors were opened, how many students enrolled in them, etc.
- D. **Systemic Outcomes.** The overall contribution of foundation grant recipients and of its activities in the professional sphere. For example, the level of adoption of diagnostic approaches to teaching and clinical tools for teacher training, changes in screening methods and teacher training nationwide, etc.
- E. **National Impact.** The success of the foundation in effecting sustainable change in a manner that takes its grant recipients, as well as the eco-system of policy makers and the public. For example, is Israel targeting to advance educational excellence in science and math, has the scope and quality of teachers and teaching improved, and has student graduation and achievement raised.

## **QUESTIONS FOR DISCUSSION**

1. Is the foundation's theory of change valid and its operating procedures effective enough to achieve systemic results and have national impact? What are the strong points and how can they be maintained; what are the weak links and how can they be strengthened?
2. The foundation has built close and valued working relationships with project leaders. What is the best way to carry out assessment and evaluation within the framework of those relationships, and what are the expected repercussions?
3. Until now the foundation has followed the inputs and outputs as well as its impact at the national level. How can the foundation prepare itself for the assessment of outcomes, what important indicators should be evaluated, and what measurement methods are appropriate?
4. As a spend-down foundation whose aim is to leave behind it an arsenal of knowledge and capabilities, what should be the role and practice of documentation and knowledge creation? Should this be done separately from the measurement and evaluation, and what are the implications in terms of methods, processes, resources and staffing?

As **background** to the discussion, we recommend reading the following:

- A. Draft of [Updated Strategic Roadmap 2014](#) (pp. 51-66)
- B. The Center for Effective Philanthropy, Feedback report from grantees and partners (pp. 44-48)

## **PARTICIPANTS**

MS. SHLOMIT **AMICHA**I, Former director general of the Ministry of Education

DR. AVITAL **DAR**MON, The Initiative for Applied Education Research

DR. TAL **FRE**UND, Director of the Assessment and Evaluation, the Centre for Educational Technology

PROF. MICHAEL J. **F**EUER, Dean of Education, George Washington University

DR. HAGIT **G**LICKMAN, Director, National Authority for Assessment and Evaluation in Education

DR. GILA **M**ELECH, Former Director of Assessment and Evaluation for the Rothschild Foundation-Caesarea

MS. YAEL **S**HALGI, Deputy Director, Yad Hanadiv

DR. YAEL **S**TEIMBERG, Head of Research and Evaluation, Institute of Democratic Education



THE CENTER FOR  
EFFECTIVE PHILANTHROPY

September 2014

## **KEY FINDINGS AND RECOMMENDATIONS FROM TRUMP FOUNDATION 2014 GRANTEE AND NON-GRANTEE PARTNER SURVEY**

*By: Kevin Bolduc and Mark McLean – Assessment Tools, The Center for Effective Philanthropy*

In May and June 2014, The Center for Effective Philanthropy (CEP) conducted a survey of the Trump Foundation’s grantee and non-grantee partners. The memo below outlines the key findings from the foundation’s Grantee Perception Report (GPR) as well as the methodology used to collect this feedback.

Assessing funder performance is challenging, and a range of data resources is required. The Grantee Perception Report provides one set of perspectives that can be useful in understanding philanthropic funder performance over time and should be interpreted in light of the Trump Foundation’s (also referred to as “the foundation”) particular goals and strategy. The survey covers many areas in which partners’ perceptions might be useful to the foundation. The foundation should place emphasis on the areas covered according to its specific priorities. Low ratings in an area that is not core to its strategy may not be concerning.

### **OVERVIEW**

Overall, feedback from the Trump foundation’s partners reveals specific areas of strength for the foundation as well as some opportunities to improve on these baseline results:

- Almost 90 percent of partners believe that the foundation’s goals are achievable and, when asked about the foundation’s greatest strengths, 14% of partners mention the Foundation’s strategy and focus.
- A larger than typical proportion of Trump Foundation grantees report receiving field-focused non-monetary assistance from the foundation and nearly three-quarters are interested in increased efforts by the foundation to convene grantees and other partners.
- The foundation receives truly exceptional ratings for the strength of its funder-grantee relationships – higher than 99 percent of funders in CEP’s dataset – although non-grantee partners rate consistently lower than grantees on these relationships measures.
- Partners rate the foundation’s impact on their organizations, fields of focus, and ability to sustain the work funded by the foundation less positively than grantees of most funders in CEP’s dataset.

### **CLEAR FOCUS AND ACHEIVABLE GOALS, BUT MIXED FEEDBACK ON STRATEGIC APPROACH**

Trump Foundation partners indicate that the foundation’s goals are clear and achievable.

- Nearly 90% of Trump Foundation partners believe that the foundation’s goal to see a 20 percent increase in the number of high school students studying advanced Physics and a 15 percent rise in students studying advanced Mathematics in ten years is feasible.
- Many partners also describe the foundation’s “clear focus” as one of its greatest strengths.
  - They rate the clarity of the foundation’s communication of its goals and strategy more positively than grantees of 96 percent of funders.
  - When asked to describe the foundation’s greatest strengths, 14 percent of comments mentioned the foundation’s clear focus and strategy, and another 14 percent described aspects of its external work and image.

Still, when asked about the foundation’s greatest weaknesses, many partners comment on the scope of the work and the foundation’s approach to external work.

- 38 percent of partners comment on the foundation’s external work and 30 percent comment on the narrow scope of the foundation’s work as the foundation’s greatest weakness.
  - Partners’ comments about weaknesses in the foundation’s external work were inconsistent – even sometimes contradictory. They included a range of views such as: the foundation’s level of expertise and understanding of the field, redundancy with existing programs, a lack of innovation, and criticism about which projects were funded.
  - Regarding the scope of the foundation’s work, several partners describe a “lack of flexibility” and “excessive focus” on the foundation’s goals as a weakness.

*Recommendation:* Partner feedback indicates that the foundation has been very clear about what it expects to achieve and how it plans to achieve it, but the foundation may also need to continue advocacy and education with its diverse set of partners about why it believes its strategic approach is the best path to success.

### **HIGH LEVEL OF NON-MONETARY SUPPORT AND DESIRE FOR INCREASE IN CONVENING EFFORTS**

Compared to the typical funder, Trump Foundation provides a larger proportion of its grantees with intensive patterns of non-monetary assistance – particularly what CEP calls field-focused assistance – and this assistance is meaningfully related to perceptions of the foundation’s impact. Many partners suggest that the foundation increase its efforts to convene partners and grantees.

- 30 percent of grantees reports receiving field-focused assistance compared to only 8 percent at the typical foundation.
  - Intensive, field-focused assistance involves providing grantees with at least 3 of the following resources:
    - Introductions to leaders in the field (received by 67% of Trump grantees)
    - Facilitation of collaboration (64%)
    - Insight and advice on grantees’ field of focus (48%)
    - Seminars/forums/convenings (36%)

- Research or best practices (24%)
- Grantees that receive intensive field-focused assistance rate the foundation’s impact on their fields as well as the foundation’s leadership in new thinking and practice more positively than grantees receiving little or no non-monetary assistance.
- In addition, 61 percent of the foundation’s partners report participating in at least one convening, organized by the foundation.
  - Grantees rate the helpfulness of convenings more positively than non-grantee partners.

Most partners indicate they would like the foundation to increase its efforts to convene grantees and partners.

- 74 percent of Trump partners would like to see more efforts from the Trump Foundation to convene partners and grantees. When asked what types of events would be most useful to their organizations:
  - 85 percent of grantees and partners indicate that general knowledge sharing events would be most useful;
  - 81 percent of grantee partners and 63 percent of non-grantee partners indicate that small groups focused on a particular topic would be useful;
  - 71 percent of grantees partners and 58 percent of non-grantee partners report that enrichment events with experts would be useful.
- In addition, when asked how the foundation can improve, partners most frequently suggest focusing on learning from and collaborating with public, philanthropic, nonprofit, and grassroots organizations.

*Recommendation:* Given the strong interest expressed by partners for the foundation to convene grantees and partners, the foundation should consider opportunities to further increase its efforts in this area. In addition, the foundation should consider how it can enhance the helpfulness of these events for its non-grantee partners, as well as how it can use these events to learn from partners across all sectors.

## **EXCEPTIONALLY STRONG RELATIONSHIPS WITH GRANTEES**

Trump Foundation’s relationships with its partners is one of the foundation’s greatest strengths, positioning it well for future efforts working with partners to achieve its goals.

- Trump receives higher ratings than 99 percent of funders in CEP’s dataset for the overall strength of its relationships with grantees.
  - Trump grantees rate higher than *any* other funder’s grantees for the fairness of their treatment by the Foundation.
  - Grantees also rate their comfort approaching the foundation if a problem arises more positively than nearly all funders in CEP’s dataset.
- The Foundation also receives strong ratings (an average rating higher than a 6 on a 7-point scale) from partners when asked to what extent it “approaches the relationship with respect,” “respects partners’ expertise in their area of focus,” and “trusts partners to carry out the work specified in the partnership.”

- When asked about the foundation's greatest strengths, many of Trump's partners describe the foundation's interactions, emphasizing staff's "professionalism," "openness," and "ability to cooperate."
- These strong relationships are also seen during the foundation's work with grantees during the application phase. Compared to grantees of the typical funder, Trump Foundation grantees indicate the Foundation's staff was more involved in development of their proposal and 78 percent of grantees – a larger than typical proportion – report they have had individual communication with Foundation staff during this process. Still, grantees reported feeling very little pressure to modify their own goals in order to craft a proposal that was likely to receive funding.

Although the foundation receives positive ratings on many relationships measures, non-grantee partners rate consistently less positively than grantees on relationships measures.

- In particular, non-grantee partners rate significantly less positively than grantees for their comfort approaching the foundation if a problem arises, responsiveness of foundation staff, and the clarity of the foundation's goals and strategy – providing ratings that are lower than typical for *grantees* across CEP's dataset. (Ratings of non-grantee partners are also lower than typical compared to the typical response in CEP's surveys of other funders' non-grantee stakeholders.)
- Non-grantee partners report having less frequent contact with the foundation and are less likely to initiate contact as frequently as their primary contact.

*Recommendation:* The foundation should seek to maintain its exceptionally strong relationships with grantee partners and consider to what extent it can enhance relationships with non-grantee partners.

## SIGNIFICANT ROOM TO IMPROVE ON BASELINE IMPACT RATINGS

As a relatively new foundation, but also one with a limited life span, partners' perspectives on the foundation's current and future impact are important to understand. In this baseline 2014 survey, at a time still early in the foundation's existence, partners rate the Trump Foundation's impact on their organizations and their fields of focus substantially lower than typical.

- Partners' ratings of the foundation's impact on their fields are lower than 98 percent of funders in CEP's dataset, and ratings of impact on their organizations are the lowest in CEP's dataset of grantee survey results.
- A larger than typical proportion of grantees (55%) reports using the grant to add new program work, and grantees rate the foundation's impact on their ability to sustain the funded work less positively than grantees of all other funders in CEP's dataset.
- Ratings of several key predictors of impact ratings are more positive, though.
  - Perceptions of the foundation's understanding of the fields in which grantees work are rated positively and typically compared to other funders. The same is true for perceptions of the extent to which Trump understands grantees' goals and strategies.

- As mentioned above, the foundation's relationships with grantees are also very strong.
- Ratings also differ across the foundation's grantee partners:
  - Trump Foundation's strategic grantees rated the foundation's impact on their fields significantly more positively than other grantees.
  - Grantees that reported receiving grants equal to or larger than \$475K rate the foundation's impact on their fields more positively than grantees receiving smaller grants. They also rate the foundation's impact on their organizations more positively than other grantees, although the difference is not statistically significant.

*Recommendation:* Given partner feedback, CEP recommends that the Trump Foundation reflect on whether these ratings align with its expectations for partners' perspectives of the foundation's impact at this point in its efforts. The foundation should also consider how confident it is, given the other strengths identified in partner feedback, that it will see improvements in perceptions of impact if it stays its current course. There may also be opportunities for the foundation to strengthen how it communicates its progress and impact with partners over time.

## RECOMMENDATIONS

Overall, CEP recommends that the Trump Foundation consider the following in order to build on its strengths and address potential opportunities for improvement:

- Given the mixed perspectives on the efficacy of the foundation's choice of goals and strategy, Trump Foundation should build on the exceptional clarity of its goals and strategy by further educating partners about why it believes its goals and strategy will be successful.
- Increase the foundation's efforts to bring together grantees and non-grantee partners through general knowledge sharing events, small groups, and enrichment events with experts.
- Reflect on whether strengthening relationships with non-grantee partners is important and increasing focus on interaction with and responsiveness to that group.
- Reflect on the foundation's expectations for impact at this stage in its life-cycle and evaluate whether the foundation believes it will be able to improve on the baseline impact ratings it considers most important.

## METHODOLOGY

The Center for Effective Philanthropy (CEP) surveyed 114 grantees and non-grantee partners of the Trump Foundation during May and June of 2014. Overall, CEP received 61 completed responses for a 54 percent response rate. CEP achieved a 63% response rate with the foundation's grantees and a 45% response rate with non-grantee partners.<sup>1</sup>

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<sup>1</sup> CEP's typical response rate for grantee surveys is 67% and the typical response rate for non-grantee stakeholder surveys is 45%.



## **AN EVENING OF EXCELLENT TEACHING**

### **A Professional and Social Evening for our Partners**

20 NOVEMBER 2014, 18:00-21:45, DAVID CITADEL HOTEL, JERUSALEM

#### **PRACTICAL DEMONSTRATIONS FOR THE ADVANCEMENT OF HIGH QUALITY TEACHING**

##### ***'PERSONNEL' TRACK***

**18:15 - 18:45** Master Workshop: **The Master Teacher and Instructional Coaching**  
Through dialogue between a new teacher and his instructional coach, we will learn about the challenges he is facing in the classroom and the ways in which they deal with them. The participants in the conversation are part of the 'Teacher-Researcher' program ("Moreh Choker") of Hebrew University and Jerusalem's Educational Administration.  
**Presenters:** Guy Ashkenazi and Mattan Hurevich

**18:45 -19:15** Opinion Platform:  
**Is a New Generation of Teachers being Created Before Our Eyes?**  
In recent years new teachers have been recruited, the majority of whom have come to the profession at a later stage, having completed university degrees and accumulated professional experience in other fields. Who are these new teachers? What training do they need and what challenges are involved in their placement and integration?  
**Moderator:** Eyal Sinai  
**Participants:** Dr. Tili Wagner, Dr. Saleit Ron, Mossi Oz

##### ***'TOOLS' TRACK***

**18:15 - 18:45** Master Workshop: **Using Video: Analysis of a Filmed Lesson**  
A short workshop with the staff of the Weizmann Institute's "Adasha" Project. We will watch a short video of teaching and learning in the classroom and together will analyze what we see from different angles and attempt to learn how video can assist us in improving teaching quality.  
**Presenter:** Dr. Ronnie Karsenty

**18:45 -19:15** Opinion Platform:  
**How to Analyze Learning and Adapt Teaching to each Student**  
Excellent teaching is dependent adapting instruction to the ability, challenges, way of thinking and learning pace of each student in the class. Is this an achievable ambition? What are the obstacles? Can diagnostic tools help, and is it possible to integrate them into the teaching and learning process? If so, how?  
**Moderator:** Avital Elboim-Cohen  
**Participants:** Prof. Ruhama Even, Yarden Asa, Dr. Baba Sternberg

##### ***'SYSTEM' TRACK***

**18:15 - 18:45** Master Workshop: **The Professional Community**  
Master teachers who supervise professional groups of physics teachers will demonstrate how students' learning and thinking in the classroom influences the

teaching community. With the audience's assistance we will analyze the students' actions and be taken with how this method enables professional colleagues to help each other improve their teaching.

**Moderator:** Kobi Shvarzbord and Smadar Levy

**18:45 -19:15** Opinion Platform:

**Support Networks for High Quality Teaching in the Field**

A talented and skilled teacher is a necessity but without a support network and in the absence of cooperation and activity coordinated with the school, local authority, network and district, they will find it challenging to succeed in the long term. What support network is required for qualitative teaching, what does it consist of and what must be done to deploy it?

**Moderator:** Shirley Rimon

**Participants:** Mendy Rabinovich, Dr. Amnon Eldar, Dr. Yehudit Shalvi, Anna Vaknin

**19:30 -21:45** Reception, Dinner and Greetings

## **STRATEGIC ROADMAP (Updated)**

The three years since the establishment of the Trump Foundation have offered us a real opportunity for engagement, dialogue and learning. During this period, the foundation began to build its [portfolio of programs](#), while forging partnerships with leading educational institutions in Israel that develop and implement groundbreaking projects.

Openness and engagement are values that have guided us from the start. Our [Strategic Roadmap](#), which preceded our work and drives it until today, was written together with experts, researchers and teachers. They all continue to be at the heart of our activity, providing sound advice, opinions and critique, and they play a central role in our work.

Now the time has come to stop for a moment, to summarize what we have heard from you and to take another look at the foundation's strategy. We should ask ourselves: What have we learned about what is needed? About what is possible? About what is difficult? What is clear to us today that was vague in the past? What is still blurry and requires clarification? And how can we improve our work accordingly?

This document attempts to summarize the insights and lessons so far, and to propose an updated strategic roadmap. Like its earlier version, the document serves as a navigation map that is in constant motion. Therefore, it is open to comments, responses and proposals, as we are fully aware that further amendments will be made to the document in the future.

This is also a good opportunity to thank you for your friendship, caring, sincerity and candor. We recently received systematic [feedback](#) from you, which included a part that was very flattering and a part that guided to areas we must improve. Your feedback is priceless; we need it and wish to express our heartfelt gratitude for it.

We would be happy to receive similar feedback from you on this document. Please read it with a professional eye in light of your rich experience and share your thoughts, doubts and ideas with us. For us, it is a great honor to listen to you, to learn from you, and to be partners with you in pursuing a mission of social and national importance.

**The Trump Foundation team**

## KEY POINTS

The Trump Foundation was founded in 2011 in order to help the education system in Israel stem the decline in excellence in the study of mathematics and the sciences in secondary schools. We believe that turning the current regression into a positive trajectory in a sustainable and systemic manner is a primary need of the highest human, social and economic importance.

For this purpose, the foundation chose to invest in quality teaching that focuses on the learning of each student and supports them in their studies. We know that there are many students in schools, in all communities and of all backgrounds, who are interested and capable of excelling – if only they were provided with high quality teaching.

The [Strategic Roadmap](#) the Trump Foundation has followed since 2011 focuses on three aspects that affect the quality of teaching. The experience of [successful education systems](#) shows that each of these components is vital, but that systematic and sustained improvement occurs only when they are implemented together and in alignment:

1. **Attracting talent** – Encouraging a new generation of outstanding people to choose a teaching career, undergo training and become successfully integrated in teaching.
2. **Nurturing expertise** – Developing the clinical skill of teachers to promote the learning of each one of their students in a large and heterogeneous classroom.
3. **Showcasing practice** – Partnering with systems and networks that support quality teaching and helping them to demonstrate effective implementation at scale.

In pursuit of its mission, the Trump Foundation operates in four spheres of influence:

- A. Initiating and supporting **programs** led by organizations with proven experience of success. The foundation tries to choose organizations that have relevant capabilities and deeply identify with the foundation's strategy; it helps these organizations operate within and together with the system in an expanding and ongoing way.
- B. Developing professional **networks** linking its programs with professionals and practitioners who lead the field. In this manner, the foundation works to foster alignment and collaboration between diverse organizations that share the same goals, with the aim of maximizing effectiveness and ensuring efficiency and sustainability.

- C. Forming **partnerships** for implementing quality teaching in schools designed to strengthen excellence in the study of mathematics and the sciences. The Foundation collaborates with stakeholders in order to build demand and capacity, and to display how through investment in teaching, significant results can be achieved in a system-wide and sustainable manner.
  
- D. Creating **growing momentum** for strengthening excellence in the fields of mathematics and the sciences. As an overall umbrella for its activities, the foundation seeks that the work of those engaged in the field – in the government, in academia, in industry, in schools and the public – is coordinated and synchronized around shared goals and measures.

**A combination of these spheres of activity is designed to propel a national process that aims to significantly increase the rate of excellence in the fields of mathematics and the sciences within a decade. When this goal is realized, Israel will catch up to the world's leaders in educational achievement and will be better positioned to enter the second quarter of the 21<sup>st</sup> century.**

#### **NEED AND OPPORTUNITY**

As a state that is built upon science and technology, and is perceived in esteem as “the startup nation,” Israel cannot allow itself low educational achievement in general, and a low bar of excellence in particular. About ten years ago, following the publication of international test results that exposed the woeful state of educational achievement in Israel, the government took note of this problem and decided to increase the education budget, to gradually raise teachers’ salaries and to supplement classroom instruction with individual tutoring and work in small groups.

Consequently, and thanks to a series of specific programs, early signs of improvement are appearing in the achievements of students in elementary and middle schools, and the potential for excellence in high school is growing. Nonetheless, the level of achievement is still low, the gaps are wide and the decline in the percentage of students taking matriculation exams at the level of five units has only started to slow-down. The coming years will determine whether the education system exploits its opportunity and succeeds in reversing the trend in a meaningful and continuous way.

When looking into the education data of Israel, we can see that widening the circle of excellence is an attainable goal. The high dropout rate from the five-unit level of mathematics and science indicates that there are many students interested in these studies, and that their school has identified them as suitable and capable. However, the rapid pace of instruction, the high level of requirements and the need for hard work and persistence find

some of them unprepared. The fact that small schools almost do not offer advanced-level studies in these subjects also reflects unrealized potential.

Other countries that have succeeded in significantly improving their educational achievements within 10-20 years, invested primarily in teachers and the quality of their teaching. They understood that a good teacher makes all the difference, and that each student deserves to enjoy quality instruction that allows students to fully realize their talents. Israel is also in a good starting point, since in our schools there are also outstanding teachers of mathematics and science who work relentlessly for their students; therefore, it is clear that any attempt to improve educational achievements in Israel must rely on these outstanding teachers.

However, during the coming years many teachers will reach retirement age. A large number of them are great teachers who immigrated to Israel from the states of the former Soviet Union, integrated into the Israeli education system and are now finishing their service. This juncture, which is already reflected in the closing of advanced tracks of study and the ad hoc assignment of teachers who are not appropriately trained, is a great challenge. But it is also an opportunity to help the education system in Israel to better prepare the next generation of mathematics and science teachers.

A special role is reserved for philanthropy in the effort to expand the circle of excellence in Israel and in strengthening the quality of teaching. Philanthropy can and should act as a catalyst for innovation, for identifying and disseminating best practice, for encouraging collaboration and knowledge sharing, and for driving implementation. The Trump Foundation, together with other education organizations that view this subject as their top priority, is working to help assure that Israel takes advantage of the opportunity it now possesses and that educational achievement – and excellence in particular – will be restored to its high level of achievement and status in our society.

### **WHY IS IT CRUCIAL TO EXPAND THE CIRCLE OF EXCELLENCE?**

In the 21<sup>st</sup> century, mathematics and the sciences are important for contending with the problems of the **world** – to cure disease, to supply water and food, to bolster security, to enable prosperity and to safeguard quality of life. Graduates of the education system who completed their studies at a level of excellence in these fields are considered to be prepared for the challenges and opportunities of our generation, having demonstrated an ability to address complex problems in changing environments and devise innovative solutions for them.

In **Israel** in particular, excellence in the fields of mathematics and the sciences places students in a position of relative advantage as they begin their adult lives. As a country that has built its economy on science and

technology, people with knowledge and ability in these areas can find fertile ground for applying their talents. Today, a quality matriculation certificate that includes five units in mathematics and in a scientific field is a springboard for acceptance into technological units in the army, prestigious departments in the universities, and for employment at relatively high wages.

The study of mathematics and science at a level of excellence helps students to develop **individual** characteristics that are important for their future. It combines broad knowledge, in-depth understanding and a high-level of thinking, and gives expressions to attributes of creativity, innovation and initiative. It develops learning habits that strengthen resilience, as it entails significant effort, investment of time, practice and persistence. It also involves planning, self-assessment, an emphasis on quality performance and on learning from mistakes, while fostering an ability to cope with difficulty and failure.

The expansion of excellence is also a **social** value and objective of opening doors, offering opportunities and narrowing gaps. Many students in Israel – in the center of the country and in the periphery, Jews and Arabs, religious and secular, boys and girls – are capable of this, if only they are presented with the challenge and provided with high quality teaching that is adapted to their abilities, difficulties, pace and style of learning. When these students fulfill their potential, they will build a better future for themselves and their families, and will help ensure the strength and prosperity of the Israeli state and society.

## WHAT IS EXCELLENCE IN THE AREAS OF MATHEMATICS AND THE SCIENCES?

Excellence is a high level of understanding, thinking and implementation in which students are guided by the knowledge and skills they have acquired, using them intelligently and creatively to contend with a new and complex situation.<sup>2</sup> This ability entails acquiring substantial knowledge, skills in analysis and in-depth learning, character traits of curiosity, initiative and communication, as well as moral values of individual and social responsibility.

Students at a level of excellence are:

### KNOWLEDGE

- A. Gradually building a broad and in-depth foundation of knowledge that enables them to conceptualize, generalize, extract and implement, based on research they conduct and models they design for complex situations. They see the various aspects of the problem, know how to precisely express and explain their choices and

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<sup>2</sup> This definition is based on the products of the national initiative to strengthen science education (5\*2) and on the work of the U.S. National Research Council (2012) on the subject of *Developing Transferable Knowledge and Skills in the 21<sup>st</sup> Century*, definitions of levels of excellence in the OECD's PISA examinations, the Israeli Curriculum in mathematics, physics and chemistry, and analysis of new curricula in a number of countries around the world.

thinking, and utilize this to describe phenomena, solve problems and create new knowledge.

## **SKILLS**

- B. Developing logical, spatial and algorithmic thinking, as well as creative and critical thinking. They are capable of planning and explaining an experimental array, while applying complex connections between fields, relations, sources of information and various representations. They easily translate between them, choose, compare and evaluate strategies for solving problems and draw conclusions at a high level of abstraction.

## **CHARACTERISTICS**

- C. Enjoying challenges and solving problems, assuming personal responsibility for learning, ready to persist, invest and practice, willing to face difficulties and situations of pressure, while demonstrating consistency, determination and patience. They learn from mistakes, are keen to contend with complex, open and unfamiliar situations, and employ resourcefulness, creativity and a high ability of interpersonal communication and cooperation.

## **VALUES**

- D. Setting ambitious goals for themselves and seek the truth, solutions, success and breakthroughs, while internalizing the limitations of science and the principle of doubt. They demonstrate integrity, ethical conduct and fairness, and are tolerant and open to diverse opinions and to their own mistakes and those of others. They are aware of the moral responsibility that derives from the use of scientific knowledge and take action to improve the society in which they live.

## **WHAT IS HIGH-QUALITY TEACHING OF MATHEMATICS AND THE SCIENCES?**

Countries that succeed in education invest primarily in teachers and in their teaching. These efforts are based on [research and experience](#) indicating that the quality of instruction is the most influential factor in the classroom in explaining disparities in student achievements. Therefore, the foundation's working assumption is that there is no shortcut – or detour – for expanding the circle of excellence in a continuous and sustainable way, without investing in the professional ability of the teaching corps.

We have noticed high performing education systems in Western societies have turned the teaching occupation from an 'industrialist', production-line, blue-collar occupation, to a clinical expertise. Clinical professions are unique in their high commitment to each 'patient', which includes setting



ambitious individual goals and treatment program, diagnostics, customization, monitoring and feedback. In such disciplines the practitioner takes an active role in a professional community, routinely consults with colleagues, participate in clinical rounds, residency programs, as well as in mentoring and coaching.

We therefore assume that quality teaching of these characteristics is a key factor in every field of study and in all stages of education. However, it plays a special role at the level of excellence in the study of mathematics and science. Since they are abstract fields that are considered difficult to teach and learn, where knowledge and skill are built together, there is a need for exercises, practice, persistence and understanding, deeper learning, higher order thinking and knowledge transfer. The teacher's ability to simultaneously encourage many students to learn, persist and succeed in such level is, therefore, a very special mission.

**Quality teaching** at a level of excellence in the fields of mathematics and science is a high level of instruction, which is methodically and systematically implemented, with careful planning and rigorous performance, and is based on highly developed sense of self-awareness. As a clinical profession, it is performed in a professional community, with ongoing consultation and with a focus on the progress of each and every student. This type of teaching identifies the abilities and difficulties of each student, sets ambitious goals for them, adapts the teaching to the student's way of thinking and pace of learning, monitors progress and provides the student with constructive and supportive feedback.<sup>3</sup>

Personal merit is a prerequisite for quality teaching. Outstanding teachers come from the top third of university graduates and bring with them in-depth and broad knowledge, as well as solid confidence in the field of knowledge and its connection to related fields and to everyday life. They exemplify excellence in their conduct, keep up-to-date with innovations in the field of knowledge, read scientific and pedagogical publications, participate in conferences and seminars, and write, document and publish insights from their work and experience.

Quality teaching **focuses on the learning of each student**. Outstanding teachers:

- A. Believe and are convinced that all of their students are capable of excelling; demonstrate a profound commitment to making the most of the opportunities that stand before them; set high and attainable **individual learning goals** with the students; stir their curiosity and help them to become independent learners.
  
- B. Create an **inclusive and confidence-building learning atmosphere** in their classroom that allows for questions and mistakes, encourages the

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<sup>3</sup> Based on standards of quality teaching in mathematics in Australia (2006), the standards for teaching in England (2012), the standards for math instruction of the National Council of Teachers of Mathematics and of the National Council for Professional Standards in Teaching in the United States, the work of John Hattie of New Zealand on quality teaching (2003, 2011 and 2012), the report of the Israel Academy of Sciences on the knowledge required for math teachers (2012), and reports by the Szold Institute on the teaching of mathematics and physics in Israel (2012, 2014).

expression of knowledge and opinions in writing and orally, and stimulates intellectual risk-taking. They respect their students, nurture communication skills and creativity, and encourage cooperation.

- C. Have a practical understanding of **how students think and learn** mathematics and science. They comprehend how knowledge develops among students and can identify typical mistakes, ways of thinking, learning styles and developmental processes.
- D. Are proficient in the use of a range of **assessment and evaluation techniques**, and know how to adapt them to the context in which the learning takes place. They document the learning performance of each student in a comprehensive way and use this in real time to map, diagnose, adapt the teaching and provide constructive and supportive feedback.
- E. Use a wide arsenal of **teaching approaches and methods** and exercise sound judgment in choosing strategies and techniques appropriate for the context, the learning topic, the classroom, and the diagnostic findings regarding each student.
- F. Give their students **explicit, constructive and reinforcing feedback** in accordance with their learning performance. They choose the type of feedback and the appropriate time to present it, and they use this feedback to help students to internalize the learning goals and become aware of how much they have progressed.
- G. Take an active role in a **professional community**, which routinely operates under the leadership of master teachers and systematically focuses on student learning while analyzing evidence of teaching and learning from classrooms.
- H. Build together the **professionalism of teaching**, design a shared instructional system, implement protocols of evaluation and create support systems for student learning, and improving their practice through peer-learning, documentation, analysis, mentoring and feedback.

### **STRATEGY 1: ATTRACT TALENTED PEOPLE INTO TEACHING**

Many students claim that quality teaching made all the difference for them. They note that their attraction to a field of knowledge can be largely attributed to an outstanding teacher. This often is also the reason they chose to major in a specific path of study. When students are asked what makes these teachers outstanding, the same answers are repeated: “They know how to connect to me, they identified where I’m having difficulty and how I think,” “they set ambitious goals with me, taught in a way that I can

understand and supported me along the way, believing [in me] and not giving up.”

And in fact, high performing education systems are very serious about their quality of teachers and teaching. They set a high and competitive standard for acceptance for the study of teaching and employ teachers from the top third of university graduates. In South Korea, for example, teachers come from the top 5% of university graduates; in Finland, teachers come from the top 10%. This is especially true in the fields of mathematics and science – and at the level of excellence in high school, in particular – since instruction in these fields is seen as the educational arm of the scientific and technological communities.

If it is possible to learn from these successful education systems, we can say that talented people choose to be teachers only when teaching is considered a prestigious and honorable profession, when they feel support and encouragement from the public and its leaders, and when they feel that they are part of a more comprehensive effort in which education in the country is changing direction. They continue to teach as long as they are convinced that their work directly contributes to their students' learning and helps them to overcome difficulties and exploit their potential.

There are excellent teachers serving in schools in Israel, especially in the fields of mathematics and the sciences. They include outstanding teachers who are top-rate professionals, with rich and in-depth knowledge, quality teaching skills, attributes of excellence, values of commitment and a sense of mission. They see themselves as central to ensuring that many students choose, persist and succeed in their studies at a level of excellence, and they accord each student an individual response adapted to his or her abilities, difficulties, style and pace of learning.

However, a substantial number of teachers are now approaching retirement age, including many who immigrated to Israel from the states of the former Soviet Union in the 1990s. Consequently, there is a severe shortage reflected in the closing of study tracks and the assignment of unsuitable teachers. This is an enormous challenge, but also a great opportunity because the education system in Israel will develop its next generation of math and science teachers during the coming years. This is an opportunity to make sure that those new teachers are excellent and that they receive the best training and coaching.

At the start of its work, the foundation posed a threshold question: “Are there enough excellent people to fill the shoes of the veteran teachers?” It soon became clear that the conditions for this are ripening. The public concern for the future of education, the new salary accords, the growth in the education budget and the addition of small-group instruction – all contribute to initial signs of an upturn in learning achievement. Concurrently, there is an increase in the demand for programs of teacher training in general and in the fields of math and science in particular.

It is important to note that many of those choosing to teach math and science today have special characteristics. They include a significant percentage of people over 35 years of age, from central and northern Israel, who have a degree in science or math and pursued a career in their field of specialization after completing their studies. Now, they have reached a stage in their lives in which they are interested in teaching. The central motives for this career move include a love of science, a sense of social mission, an aspiration to balance work and family, and job security.

The government identified the potential and in recent years has led an effort to identify, select and place these new teachers. Some of the initial efforts achieved partial success and the lessons drawn from them have been studied by the government and the foundation, including the need to focus on identifying the most outstanding and suitable candidates, to conduct clinical training within the schools under the guidance of veteran teachers, and to employ them in appropriate classrooms, with close supervision during their initial years of work and attentiveness toward their integration in school.

The Trump Foundation works in this field in two central channels of activity:

- A. **Increasing the demand for the teaching of mathematics and the sciences** via public exposure of high quality teaching and of the possibilities and opportunities to engage in teaching. This effort focuses on potential target communities and their close surroundings, but is also part of a wider effort to rebuild public trust, with an emphasis on the outstanding teachers' values of professionalism and commitment.
- B. **Creating a quality supply** via selection, training and placement of new teachers. This effort focuses on prestigious training programs designed for a select cadre of student teachers, meticulously identified in competitive selection processes. The programs are conducted in schools, with close guidance by outstanding teachers and continuous engagement in quality teaching focused on the learning and thinking of each individual student.

The expected results of the activity will be expressed by generating awareness, understanding, appreciation and public support for teachers of math and science, who will be boosted by an increase in the quantity and quality of suitable candidates interested in a teaching career. Consequently, a "pipeline" of clinical training will be built that will yield a new generation of math and science teachers who will successfully be integrated into the schools, filling the shoes of the retiring teachers and opening new math and science classes.

The main task we face in this route will rely on three focal points of action during the coming years:

1. Completing the development and deployment of prestigious training programs, with careful attention to the competitive selection of outstanding candidates, and training them in skills of high quality teaching focused on student learning and thinking;
2. Developing a professional network of training programs aimed at sharing knowledge and mutual learning, sharing resources and collaboration, and driving a coordinated process that will make an impact on the mainstream of teacher training in Israel;
3. Facilitating connections between supply and demand, analyzing the gaps between them and attempting to bridge these gaps, with an emphasis on a shared language between teaching candidates and school life, and successful placement of graduates of the training in the schools.

## **STRATEGY 2: NURTURING CLINICAL EXPERTISE**

Students who choose to learn in the excellence track in high school face a tall hurdle. Many are talented students who are accustomed to excelling in all fields of study, almost without effort. Suddenly, sometimes for the first time in their lives, they are required to invest, persist, practice and contend with difficulty. Since knowledge and skills are acquired together in these fields, the gap that develops at the beginning is liable to widen and deepen, leading many students, including a high proportion of female-students, to drop out of the excellence track.

This is a situation in which the quality and type of teaching play a particularly important role. Nonetheless, teachers note that in practice they are forced to implement a selective teaching approach that is suitable mostly for students who succeed on their own. Teachers say that the message they receive from the school administration, which is interested in ensuring qualification for matriculation, is that they should not “take a chance” with students who are experiencing difficulty. In addition, there is the outside pressure of the curriculum and the examination. All of these push them to advance quickly with the learning material and accept as a given that students will drop out along the way.

Many teachers believe and are interested in seeing more of their students successfully complete the excellence track. However they note that addressing this goal entails practical difficulty for them as they need to find a balance between the desire to push the class toward in-depth study and thinking, without compromising the level and pace, and the need to provide an individual response to each student in real time. These teachers say that they lack practical tools to support teaching that is adapted to the pace, style, abilities and difficulties of each student in the classroom.

In light of this, the Trump Foundation is helping teachers to promote instruction expertise that focuses on student thinking and learning. Our aspiration is to enable teachers to set individual goals and milestones with each student, and to adapt their teaching while tracking progress and providing feedback. The foundation works to help teachers observe their students' learning, examine their own teaching performance, learn from practice, acquire professional knowledge and jointly advance their professional development.

Pursuant to these objectives, the foundation is working to assist teachers in creating a professional community of colleagues in which they can analyze together the findings of the diagnosis and monitoring of student learning, as well as their connection to findings of videotaped documentation of teaching and learning in the classroom. This community is led by the teachers themselves, with mentoring by master teachers – senior-level teachers who lead the teaching and learning in the professional community and in schools:

- A. **Professional communities.** Quality teaching as a clinical profession requires a professional community that systematically focuses on student learning, while documenting and analyzing the learning and teaching from classrooms, jointly formulating a shared and coherent instructional system, building routines of monitoring learning and mutual assistance for improving the practice of teaching.
- B. **Diagnostics and monitoring.** Teachers need diagnostic and performance tasks that monitor the common errors and misconceptions, and students way of thinking and learning in real time, in order to acquire an up-to-date, comprehensive and in-depth picture of each student abilities, difficulties, progress, and thinking. The challenge is for these tasks to be valid and reliable, and that they can be effectively integrated into existing teaching and learning processes in regular classrooms.
- C. **Video documentation.** Teaching and learning occur in isolation between the walls of the classroom. Therefore, teachers need ways of turning their practice into open and shared knowledge. Videotaping of classroom learning and teaching enables teachers to observe their own practice and that of their colleagues from a perspective of analysis and study. In this way, teachers can build their professional development by themselves, while focusing their attention on student learning and the connection between their teaching and the learning progress of each student in class.
- D. **Master teachers.** In other clinical professions that develop their professional knowledge from practice, the practitioners rely to a great extent on a senior-level professional, who leads the team and the mentoring of new practitioners, and assumes a significant role in the professional arena. In schools there are uniquely talented

teachers who are held in esteem by their colleagues, with the latter turning to them to consult on professional questions and quandaries. The more these esteemed teachers are given a place as instructional coaches who lead the processes of improvement and learning of teachers, the greater the chance that quality teaching, focused on the student learning, will take deeper root.

We have realized that each of these components can be mobilized for a range of important pedagogical tasks that are not necessarily aimed at promoting high quality teaching that is focused on student learning and thinking. Therefore, in the first stage, the foundation's effort was devoted to working with its partner organizations to ensure that their development activity and implementation indeed focus on assisting teachers in documenting and analyzing the thinking of each student and in shifting to an approach that focuses on promoting student learning.

Today however, the main task we face comprises three stages:

1. **To explain what constitutes “high-quality teaching”** – including its objectives, measures, components and the connections between them, to both the professional community and the general public. Our goal is to help to illustrate and persuade that the use of these means can promote teaching in the clinical characteristics, and build an “appetite” and feasibility for this among the target audiences.
2. **To strengthen the development of building blocks that support quality teaching** and to create professional and organizational frameworks for building connections between them. The idea of creating an “Institute of Advanced Teaching” that compiles these components and serves as a professional home for master teachers seems to be an ultimate umbrella for this.
3. To prepare the ground for the conclusion of the R&D stage and helping the programs to move toward **readiness for widespread operation at scale**. This transition entails building operational and distribution capabilities while maintaining quality of operation and creating a stable and sustainable economic model relying on public funding.

### **STRATEGY 3: SHOWCASING PRACTICE**

The study of mathematics and science in schools does not occur in a vacuum and is taught in parallel to many other subject matters. Each school defines its goals, values and organizational culture in light of broad considerations, in which excellence and science education is only one and sometimes not the top priority. The administration of school, its teachers, its guidance counselors and the parents - all influence the students' ability to choose, persist and succeed. The way they all operate also affects the ability of

teachers to carry out quality instruction that focuses on the learning of each student.

From the experience in Israel and elsewhere, we learned that quality teaching can flourish and the potential of each student can be realized only when the entire school community operates in collaboration, with a clear and coherent instructional system and shared goals and measures. In such schools, the staff portrays an ambitious future vision for its students, inculcates the aspiration for excellence in the team and in the educational climate, builds regular routines of diagnostics, monitoring and feedback, involves the parents and operates a professional community that assumes responsibility for improving the service offered to each student.

Moreover, high schools in Israel are owned by a local authority or a school network and are supervised and instructed by district and staff units of the Ministry of Education. These entities have a very substantial impact on schools and play a role in pedagogical, budgetary and organizational decisions. Therefore, the foundation began to build partnerships with them in order to help them institute quality teaching, establish a network of support and drive the expansion of the circle of math and science excellence at scale.

So far, the foundation has tried a number of such partnerships in order to learn which frameworks are more effective; what are the necessary conditions; and what would be an appropriate modus operandi. We have engaged in pioneering projects in several cities, networks and districts, and collaborated with a number of national programs led by the Ministry of Education. In addition, the foundation has helped to create new innovative implementation platforms; prominent among these are “The Virtual High School” and the “5\*2” joint initiative, from which the national program of “Mathematics First” was developed.

From the foundation’s perspective, these collaborative efforts are designed to achieve a number of goals:

- A. To demonstrate how the components that support quality teaching unite around a shared vision of clinical instruction and thus contribute to an increase in the number of students who choose, persist and succeed in the advanced math and science tracks in high school;
- B. To deploy the products of programs the foundation has helped to develop and to assist them become established and spread, while building a stable basis for operation and funding and relying on stakeholders and the sovereign public entities;
- C. To stimulate “an appetite,” to create alignment and to spur shared and expanding momentum focused on achieving the goal of



broadening the circle of excellence in the fields of mathematics and science – on the local, district and national levels.

In order to decide how to focus the activity in this track in the most effective way, we will need to study the experiences in the field and address a number of dilemmas, including:

1. What constitutes a “[coherent instructional system](#)” in school? What are its components and the stages leading to its development? Will this require the development of designated tools such as an “individual learning plan” and measures such as a “quality matriculation certificate”?
2. Should the foundation act as a grant maker with its implementation partners or should it serve additional functions? For example, would it be helpful if the foundation creates a special team to support schools, or establish an intermediary organization to engage with municipalities on its behalf?
3. In these collaborations, how can the foundation preserve its philanthropic role that focuses on one-time investments in R&D, while the public entities exercise their authority and responsibility to lead, guide, operate and supervise?
4. Which adaptations are needed in order to implement such an effort with the diverse communities of Israeli society? Should the foundation prepare for significant modifications in partnerships with schools and cities of communities that administer their education systems independently?

## **ASSESSMENT AND EVALUATION**

The foundation’s programs are run in their organizations by their leaders, with the help of the foundation’s staff, and in many cases with assistance by a dedicated steering committee. Specific goals and measures are set for each program, and milestones and work stages are defined, with continual monitoring of their implementation. Each program includes performance measurement in order to receive relevant information in real time about the progress of the program. This enables corrections and improvements to be made along the way.

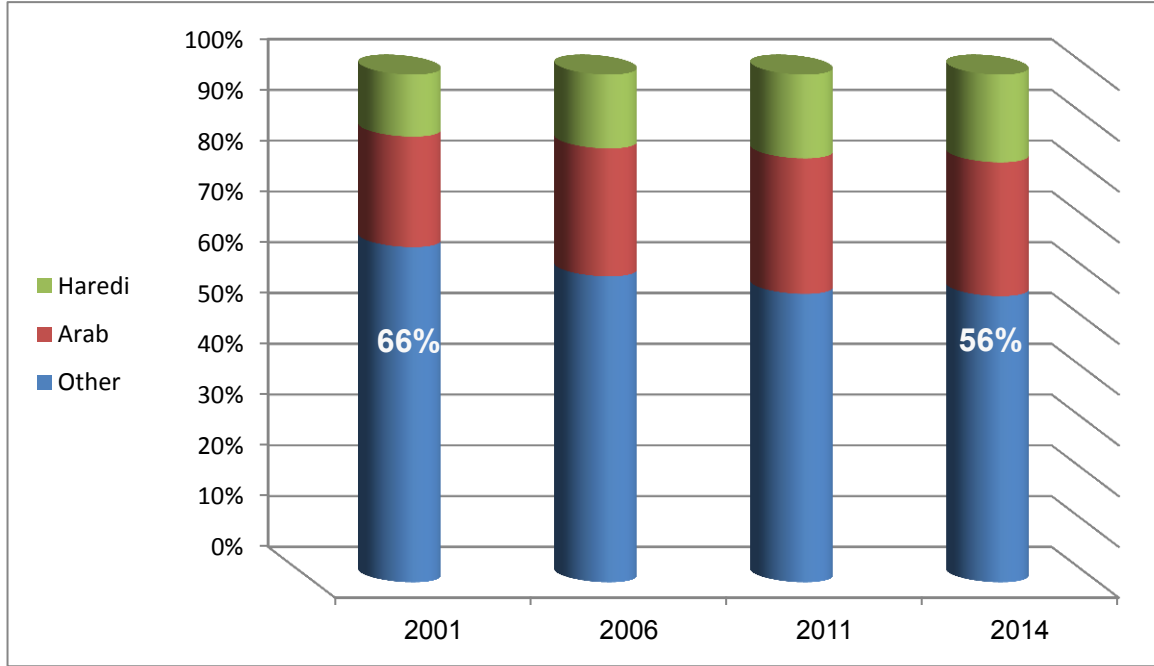
In addition, at the conclusion of the foundation’s first five years of activity in 2016, we plan to conduct a comprehensive end to end review of our activity. This evaluation will focus on various levels, including an analysis of the way the foundation operates and the quality of service it provides to its partners, an assessment of the direct products of its programs and their

collective impact on the field, and an examination of the trends in national indicators that show progress in achieving the foundation's objectives.

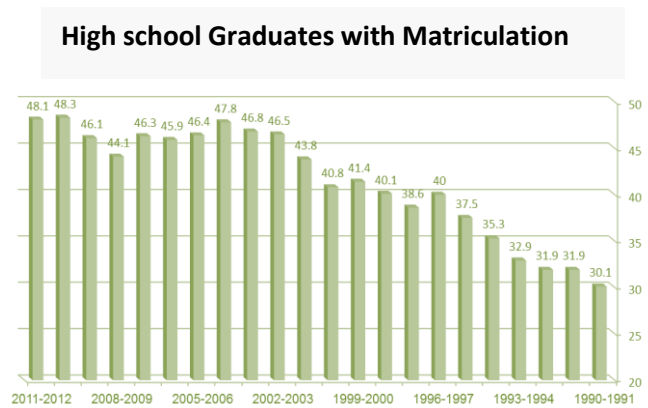
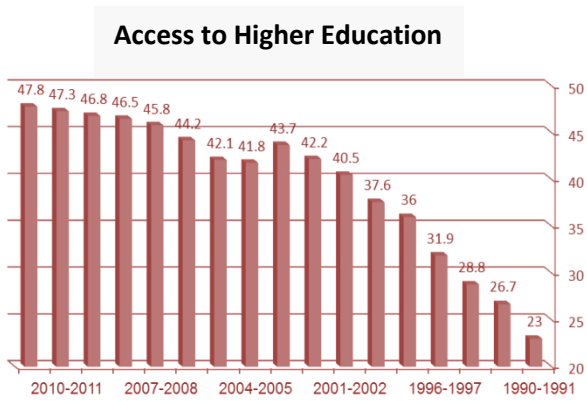
The upcoming meeting of the foundation's international advisory council will be devoted to this subject - examining the foundation's strategic roadmap, choosing key indicators we should document and measure, and recommending the suitable methods of evaluation.

# NATIONAL AND INTERNATIONAL INDICATORS

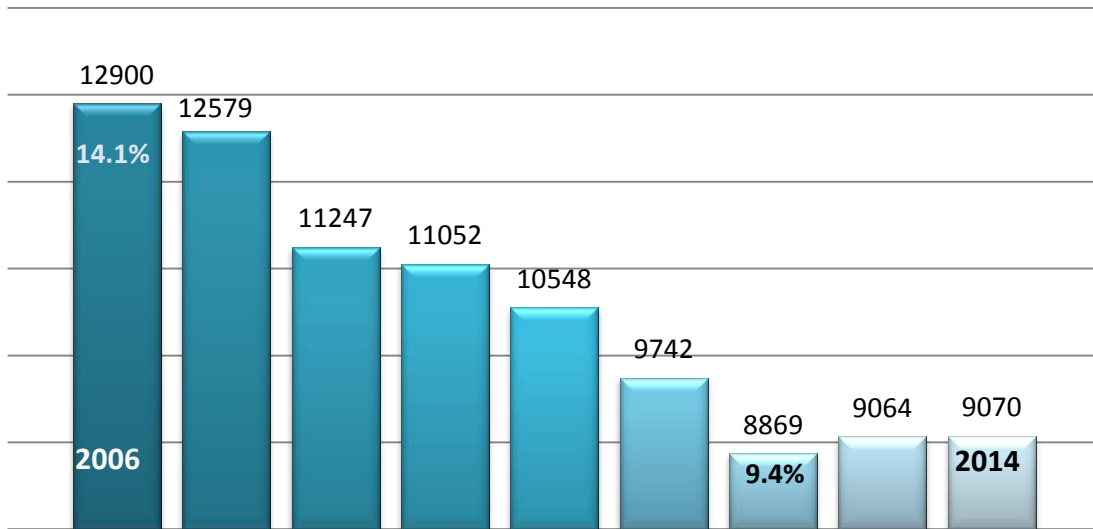
## SCHOOL DEMOGRAPHICS 2001-2014



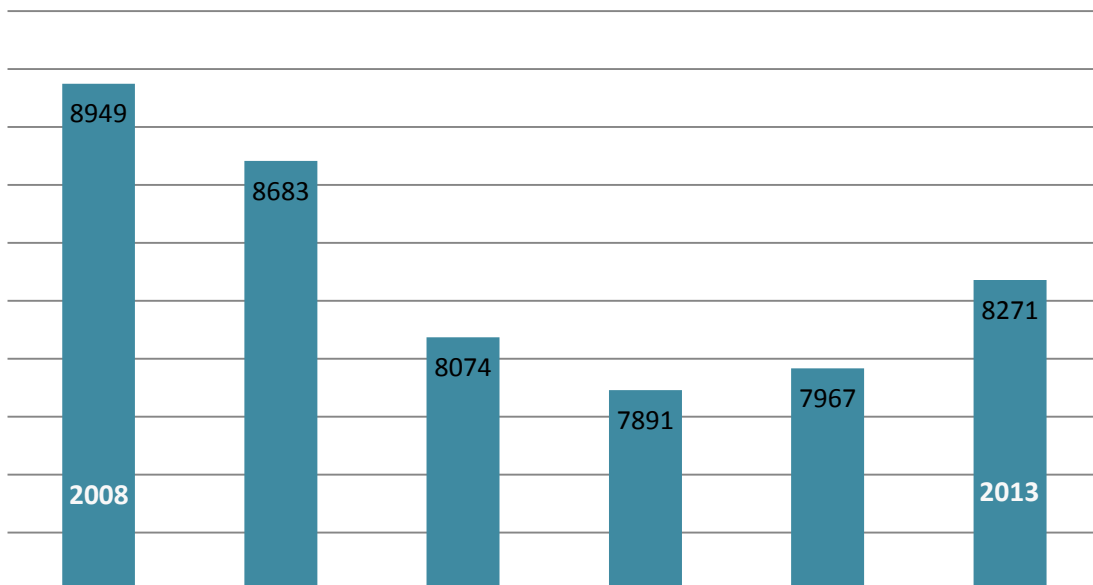
## ACCESS TO HIGHER EDUCATION 1990-2013

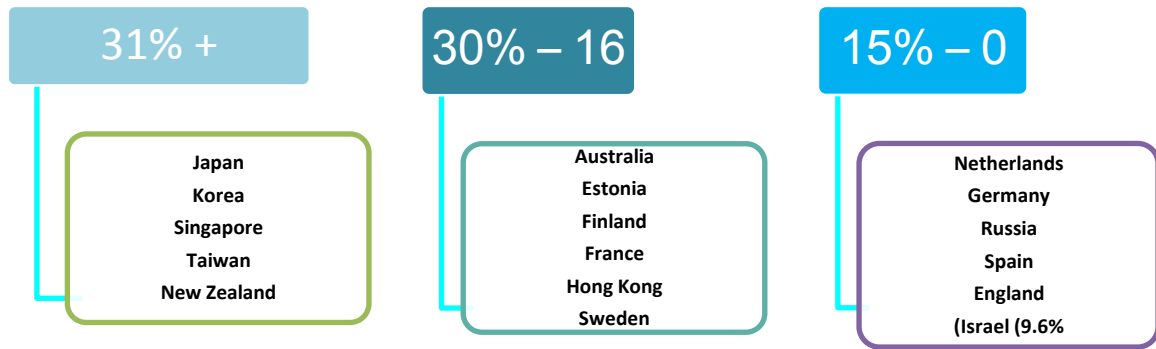


**ADVANCED MATHEMATICS IN HIGH SCHOOL** MATRICULATION MAJORS

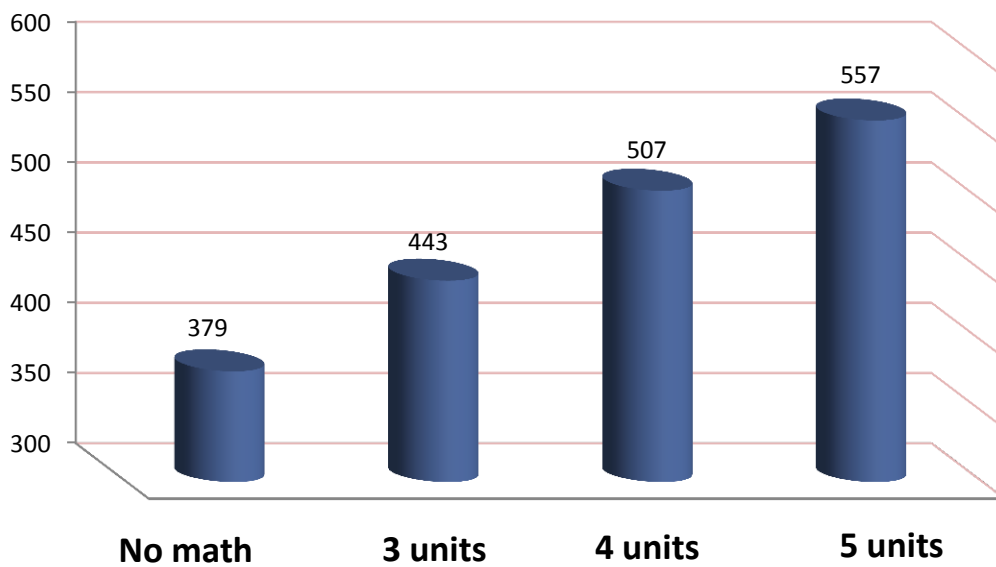


**ADVANCED PHYSICS IN HIGH SCHOOL** ELECTRICITY MAJORS

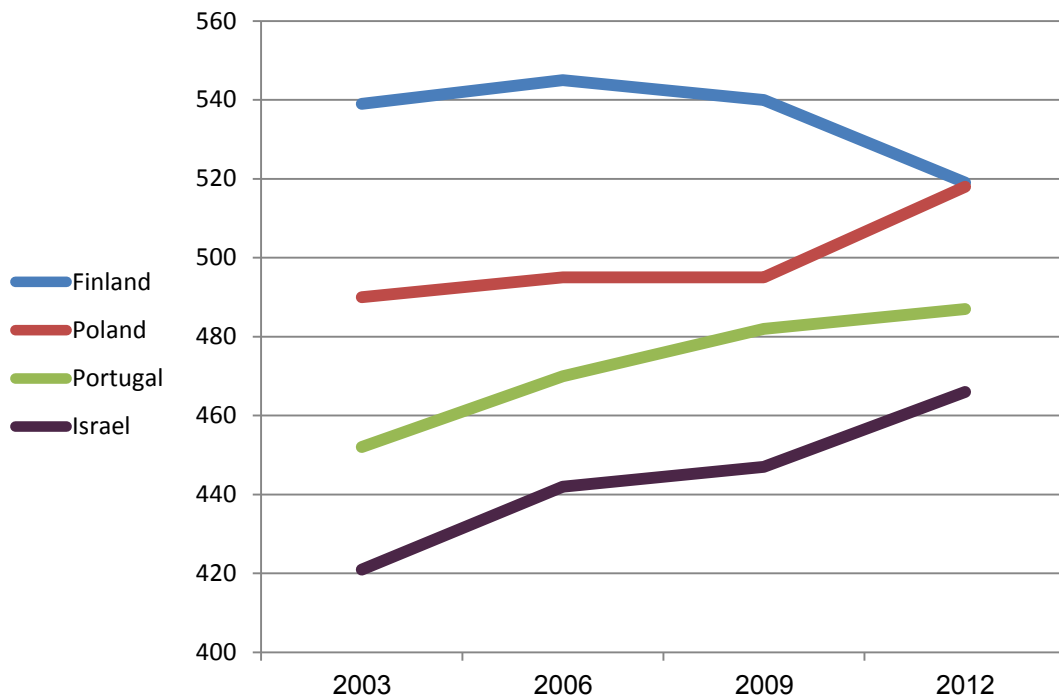




CORRELATION BETWEEN PISA AND MATRICAULTION IN MATH

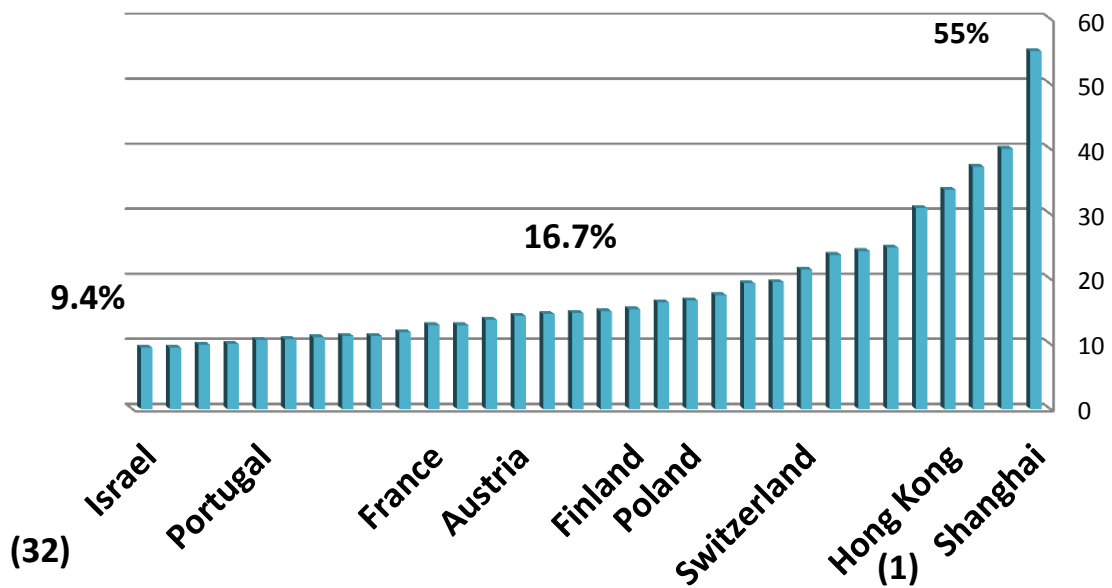


**PISA MATHEMATICS 2003-2012**

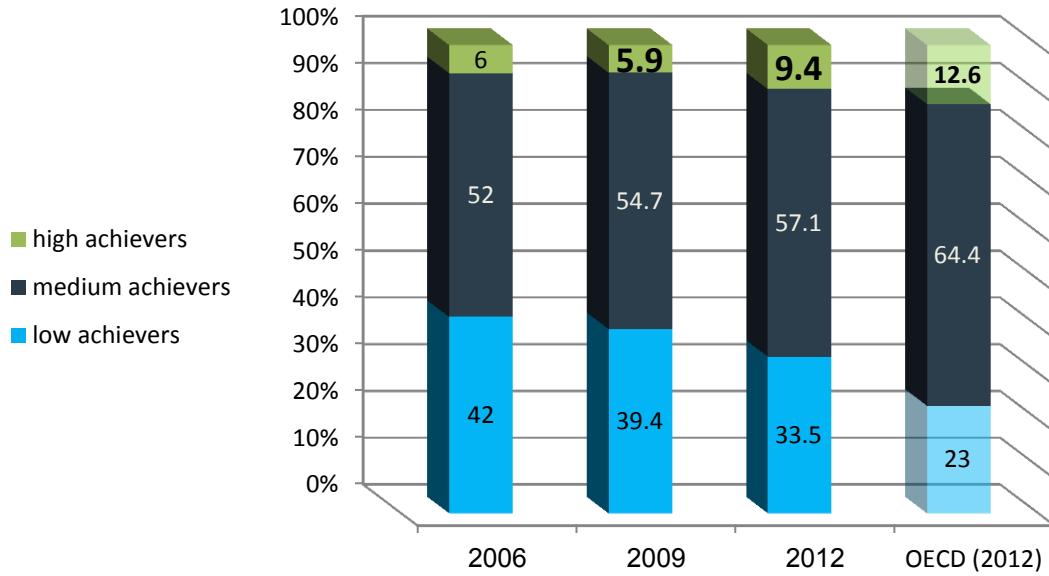


**% OF HIGH PERFORMING STUDENTS**

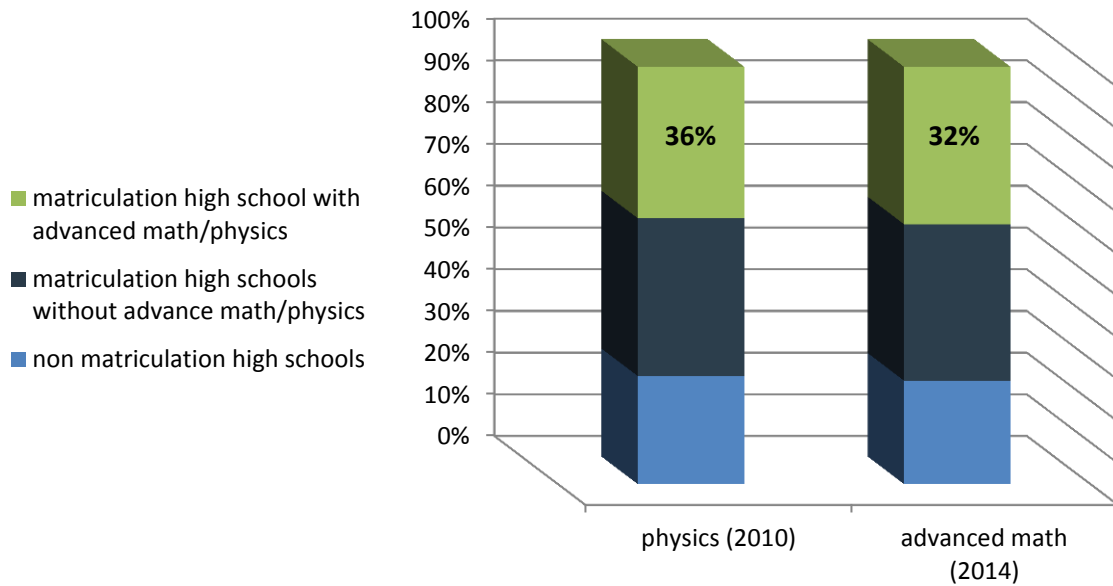
PISA 2012 / MATH (LEAGUE CHART)



**% OF HIGH PERFORMING STUDENTS** PISA 2012 / MATH (TRAJECTORY)

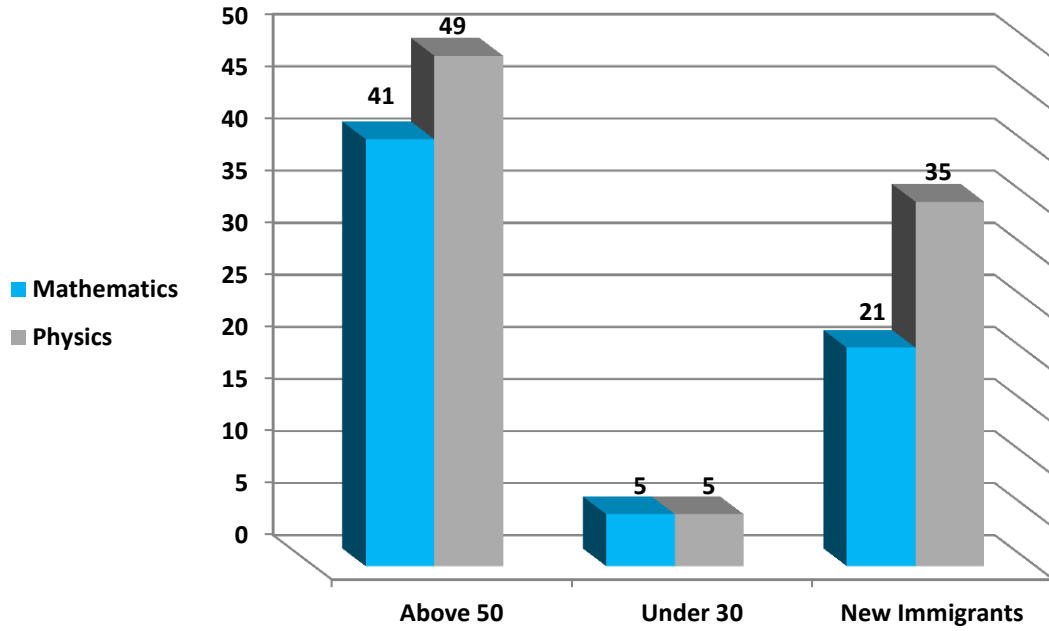


**MATHEMATICS AND PHYSICS CLASSES** 2010 / 2014

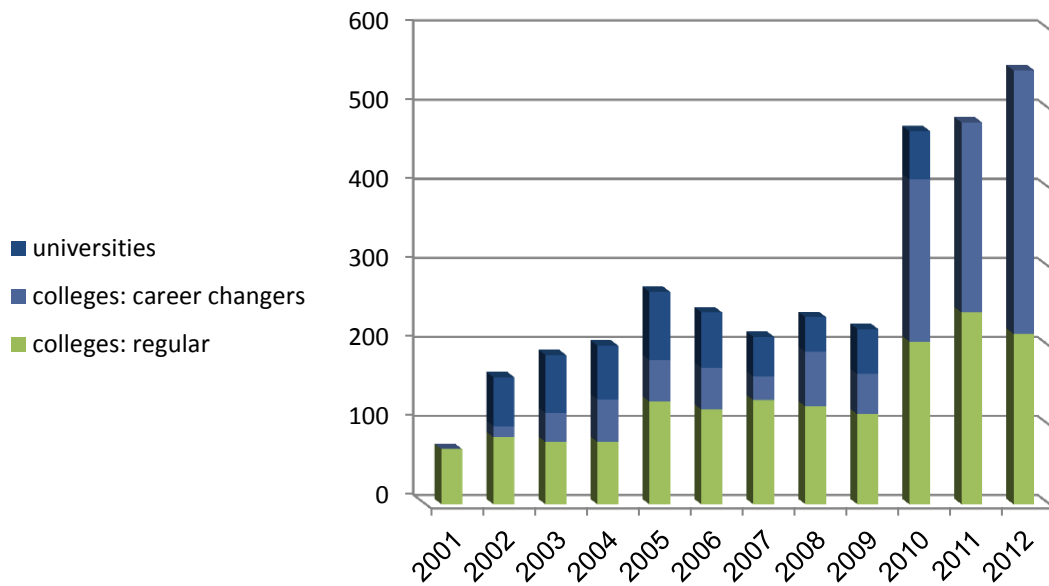


\* In 2014 there are 1,502 high schools in Israel, of which 1,129 teach for the matriculation diploma

**EMERGING SHORTAGE OF HIGH SCHOOL TEACHERS 2009**



**HIGH SCHOOL TEACHING STUDENTS OF MATHEMATICS 2001 - 2012**



\* We have yet to obtain the 2011-2012 data from the universities.

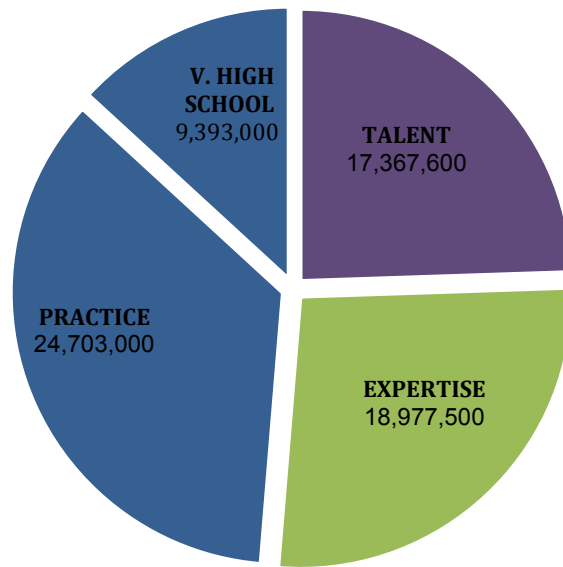


**THE TRUMP FOUNDATION IN NUMBERS**  
2012-2014

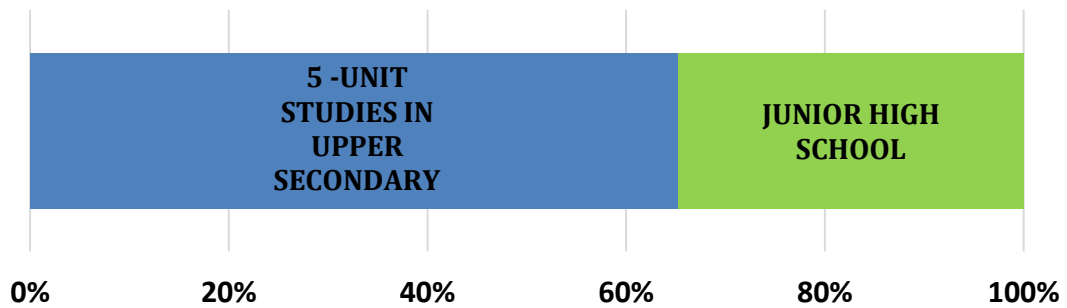
	<b>Approved</b>	<b>To Date*</b>
<b>Number of Grants</b>	81	
<b>Grant Amount</b>	70 million NIS	26 million NIS
<b>Average Grant Amount (without Virtual High School)</b>	770,000 NIS	
<b>Average Grant Duration</b>	2.5 years	
<b>Schools in which Foundation Programs Operate</b>	451	362
<b>New Physics and Mathematics Classes Opened</b>	100	30
<b>Number of Students in New Classes</b>	1,738	652
<b>Graduates of Teacher- Training Programs</b>	420	56
<b>Teachers Staffing Foundation Programs</b>	246	246
<b>Teachers who have received Pedagogical Coaching</b>	1,329	429
<b>Teachers Taking Part in Professional Communities</b>	350	238

\*This data is based on grants approved between December 2011 and July 2014 and will be executed by 2017.

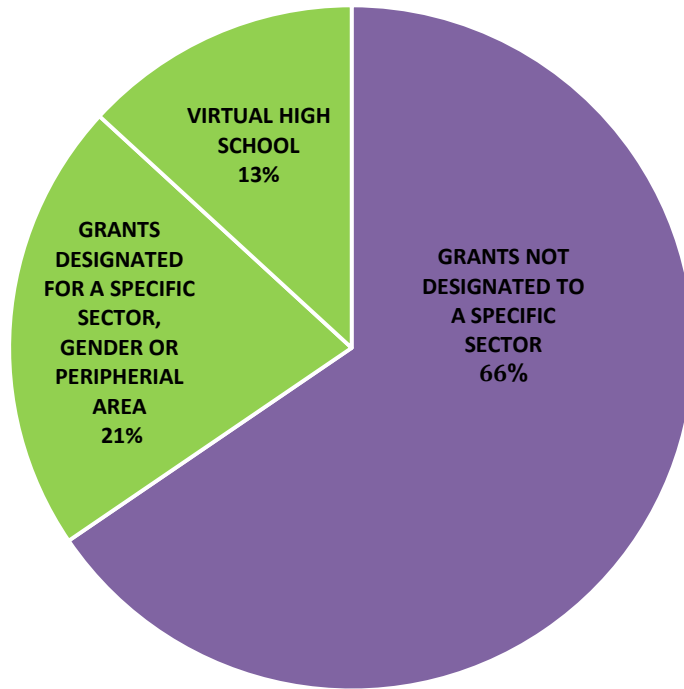
### ALLOCATION OF GRANT FUNDS BY STRATEGIC TRACKS (NIS)



### ALLOCATION OF INVESTMENTS BETWEEN JUNIOR HIGH SCHOOL AND UPPER SECONDARY SCHOOL



**RATE OF INVESTMENT DESIGNATED FOR SPECIFIC SECTORS, GENDERS,  
AND PERIPHERIES**



## **THE TRUMP FOUNDATION ADVISORY COUNCIL 2012**

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### **INSIGHTS AND RECOMMENDATIONS**

13-14 November 2012

The Trump Foundation Advisory Council met in Jerusalem on 13-14 November, 2012. The purpose of the council is to consult with the foundation about possible directions of action and operation, as well as provide feedback on its strategy and progress.

The members of the Advisory Council are Professor Lee Shulman (Chairperson), Dr. Abir Abed , Mr. Danny Bar-Giora, Mr. Shlomo Dovrat, Dr. Rachel Knoll , Professor Marcia Linn, Mr. Nickolai Schwartz, and Mr. Eyal Sinai . In addition, the foundation's chairman of the Board of Directors, Mr. Eddy Shalev, joined the discussions.

This was the first meeting of the council; it coincided with the end of the first year of the foundation's operation following its establishment in July 2011. To provide background information for council members, the foundation's staff prepared a detailed document presenting an updated account of the foundation's plans, including the issues and dilemmas facing it (see background materials – "[Strategic Directions – November 2012](#)").

Leading figures in education were invited to the meetings, including holders of key positions from the Ministry of Education; schools of education; teaching colleges; research and development institutions; operating organizations; school principals and teachers (see details in attached appendix). All received the background material and the open questions in advance and were invited to offer their feedback, comments, critique and suggestions.

The attached document was written by the foundation's staff and summarizes the main insights heard during the discussions, as well as written and oral feedback received before and after the meeting. We would like to take this opportunity to thank everyone who took the time to read, respond, and participate in discussions. Our esteemed thanks go to the council members for their dedication and special efforts.

### **BUILDING A COALITION-NETWORK FOR COLLECTIVE IMPACT AROUND A SHARED VISION**

The Trump Foundation has chosen to focus its resources and expertise on the quality of mathematics and science instruction in Israeli secondary schools. This decision was based on the assumption that this is an important and pressing need that requires a comprehensive response and that positive results can be achieved within a reasonable period of time.

Most speakers at the meetings agreed with the need to improve the teaching of the sciences, but diverse opinions were heard regarding why this issue specifically is being

promoted. One council member asked, “What will be solved by doubling the number of five unit mathematics and science matriculation graduates in Israel?”

Listed below are some of the points put forth by speakers. These points complement each other and support the need to invest in strengthening scientific education, extending the circle of excellence, and promoting effective teaching in the schools:

- Israel’s security and economy is based on science and technology; therefore, there is a national imperative for the country to maintain its comparative advantage. Low achievement in scientific education puts the “Start-Up Nation” at risk – a “national emergency plan” is required to rescue the study of the sciences in Israel.
- Any modern country in the 21st century requires that at least 20% of its citizens possess high levels of mathematic and scientific knowledge and skills. Studying these subjects develops rational thought and demands intellectual effort and the development of independent learning skills – now is the time to expand the circle of excellence in Israel.
- The age of technology and globalization requires each citizen be a “learner of science”; that is, each citizen must acquire knowledge and skills that will grant them the means to manage their lives in a modern society, as well as their households, and their work. Students studying advanced mathematics and sciences are a kind of locomotive whose job it is to draw all Israeli students with it- since they are all in need of these skills.
- Israeli schools are based on an educational approach that is inconsistent with providing personal attention to the needs and abilities of each student. Mathematics and science courses especially suffer from this, which leads to fewer students choosing these subjects and a high drop-out rate. A fundamental change is required, beginning with the sciences, based on the principal of adjusting teaching methods to accommodate the learning needs of each student.
- The “industrial” approach to education has created closed classes and one-size-fits-all teaching methods, with teachers taking on the role of assembly line workers. This approach is particularly problematic in mathematics and the sciences – the time has come to open the classroom door and return the rudder of education to teachers.
- Israel devotes much effort to success in matriculation exams, which are based on teaching a large quantity of material in a limited period of time. As a result, classroom teaching does not always extend to promoting understanding and inquiry – therefore the way in which learning goals are defined and measured must be changed in order to encourage in-depth learning and make it relevant to students.

During the discussions it became clear that while having diverse opinions is valuable, what is missing is a common vision that will inspire the recruitment of organizations, professionals, and the general public to joint action. Without a shared vision and

identification with it, it is unrealistic to expect that the various parties involved in education will develop a common language and come to an agreement on objectives and measures.

While agreement on a vision is a necessary condition, not less important is the continuous dialogue surrounding it and close coordination between the various parties. The documents outlining the strategic direction of the foundation clearly show that it is aware of this and recognizes that, even with its resources, it cannot achieve systemic and lasting improvement by itself. Consequently, the foundation requires close cooperation, continual discourse, and agreement on various levels:

- In schools in which the foundation is involved, success will be dependent on the creation of a coherent “instructional system” that sets ambitious goals and allocates resources to mathematics and science studies; focuses on the progress of each student; and encompasses individual coordination among students, teachers, administrators, and parents.
- As for the professional community, the foundation must endeavor to compel organizations that receive foundation grants, as well as teacher-training institutions, to develop specific definitions and a common language regarding clinical teaching; to share their knowledge and professional infrastructure with each other; and to adapt content, methods, and their staff to attaining these educational goals.
- In the philanthropic realm, a coordinated action must take place, in order to complement the foundation's work and to generate momentum in mathematics and science studies in Israel. This is even more urgent in light of the foundation's decision to focus on strengthening the quality of teaching in secondary schools.
- On the national level, the government; academia; local municipalities; the military; school networks; civil society; and schools must all agree to act together to promote the vision, goals, and measures. Until such agreement has been reached, there is a danger that each party will pull in a different direction, resources will be diffused, and many of these efforts will fail to create the desired change.

In light of these points, the foundation must decide if it can take upon itself the role of convener – gathering a group of stakeholders around one table to begin the process of defining a common vision. The vision must be formulated to evoke a sense of necessity and urgency; it should create accord, while at the same time evoke identification and coalition. The foundation should adopt an approach much like that of a “spider” – creating links; exerting pressure; and spinning a web of study, transparency and collaboration. It must give these activities high priority and recognize that while the success of the grants it awards is a necessary condition, it is not sufficient to set systemic success in motion. The foundation must recognize that networking has the power to create movement; momentum; sustainability; and real, strong, and broad influence.

## **FORMULATING A PRACTICAL DEFINITION FOR HIGH QUALITY TEACHING FURTHERING EXCELLENCE IN LEARNING**

The foundation has set as its goal the expansion of the circle of excellence, measured by an increase in students joining advanced (five unit) matriculation tracks in mathematics and the sciences, staying in the courses, and successfully completing them. The working method the foundation has adopted to attain this goal is improving the quality of instruction in secondary schools.

The foundation's point of departure is that many students in Israeli high schools are capable of studying mathematics and the sciences at an advanced level, but for various reasons do not realize their own potential. The foundation must identify which students are members of this "second circle", what it is that they lack, and what factors influence their choices and their chances of persevering in their studies.

The foundation should identify under-represented groups that may have genuine potential to be outstanding students. The council members found it interesting that in Israel this group is mainly composed of girls who have high achievement levels in middle school. In addition, attention should be paid to the many schools in the state-religious stream, which for various reasons tend not to teach the sciences in secondary school.

The foundation must take into consideration the fact that Israeli schools are not assessed on the basis of excellence and are not rewarded for the quality of their achievements. Schools in Israel devote themselves to increasing the number of their students eligible for matriculation certificates rather than increasing the number of students studying science at an advanced level and succeeding in their studies, not to mention increasing the extent of their knowledge and understanding.

Having said that, initial signs of change are discernible in a number of universities; some divisions of the Ministry of Education; and several municipalities, school networks, and schools that have set a high bar for excellence. Movement towards deeper learning is also expected in the planned framework for the 2015 PISA assessment, which can be used by the foundation as an indicator, since the definition of good learning in these tests will be manifested by in-depth learning, scientific thinking, scientific activity, transferability between disciplines, peer learning, and team work.

In other words, the foundation must clearly and explicitly define what it means by its stated goal of excellence, not only by depending on non-calibrated matriculation exam results. The general assumption is that the foundation should stress crucial in-depth learning skills. It should be noted that the council learned that matriculation exams are currently undergoing revision in this spirit.

After the foundation defines excellence in learning, it will need to clarify what it means by its stated goal of quality teaching. In the view of the foundation, quality classroom instruction focuses on the learning processes of each student. The foundation is obviously not interested in endorsing or advocating a specific method of teaching; on the contrary, it aspires for teachers to be able to choose from a variety of methods and adapt them to the individual learning needs of each student.

The foundation uses the term "clinical teaching" to describe its intentions, i.e. personal focus on students, assessment of student capabilities and needs, collecting and making use of ongoing data documenting student progress, creating a personalized program for

each student and providing individual feedback in real time. To fulfill this approach, schools will operate more like clinics and less like factories. Teachers will cooperate with each other from within a professional learning community that is focused on monitoring the “treatment” of each student by documenting teaching practice and utilizing data.

During discussions relating to this topic, participants voiced a number of responses that portrayed quality teaching from different perspectives that deserve the attention of the foundation as it develops its definition of the clinical approach:

Some teachers and schools are convinced that the best and most practical method of teaching is to carry out ability grouping (for example, dividing physics students into four unit and five unit mathematics classes), rather than trying to teach them in heterogeneous classes. They maintain that many students, especially those of the “second circle”, do better with traditional, frontal teaching that is more technical, leaving in-depth study and investigation to the more outstanding students.

In comparison, some researchers and teachers oppose ability grouping, maintaining that investigative learning is suited for all students since it is more relevant and interesting, as well as less competitive. They note that it is best to teach mathematics and sciences from an interdisciplinary perspective and combine subjects in a more interesting and modern way to motivate more students (both girls and boys), thereby extending the circle of excellence.

For this reason, the foundation must come up with a detailed definition of what it means by “excellence in learning” and “quality teaching” on the classroom and school levels, making specific reference to clinical teaching in mathematics and the sciences. Council members are convinced that, in contrast to the past, more technologies are available to facilitate assessment, adjustment of teaching methods, learning, and individual feedback required to implement clinical teaching.

## **DEFINING THE ROLE OF PHILANTHROPY IN THE EFFORT TO RECRUIT NEW TEACHERS**

Because the teaching population of mathematics and the sciences is aging and many teachers are retiring, there is an ever-increasing shortage of new teachers to fill their shoes. To counteract this situation the foundation has set a goal of recruiting talented people to teach mathematics and the sciences in secondary schools.

During the discussions, it became clear that the Ministry of Education is very aware of this situation. Despite a lack of comprehensive data regarding the demand for teachers, it understands the urgency and has initiated and encouraged the development of a variety of teacher-training programs, including those for people who want to make a career change from the academic world, the industry, and other special programs.

Though it was clear from the discussions that the Ministry of Education is taking the issue seriously, the government has not yet defined the shortage of mathematics and science teachers as a crisis or put emergency measures into place. Until comprehensive data is available to present to the government and the public, it is unlikely that the situation will be defined in those terms.

Most of the participants discussed university and college training programs, as well as special “alternative” programs (such as Teach First Israel). They drew a complex picture



and the foundation will have to evaluate if and how it can integrate its activities into this picture in an effective manner:

- Academic freedom is enjoyed by institutes for teacher training even in their teacher-training programs, and the Ministry of Education has limited influence on the curriculum, training methods, and staff.
- There is almost no up-to-date data available from a human resources perspective on specific needs for teaching staff in schools, so there is little connection between supply and demand. Such data should be collected continuously and should inform the training programs accordingly.
- Training institutions do not feel that their programs are ineffective– they do not seem to be prepared to significantly raise their admission standards or adapt their programs and teaching staff to train their students for clinical teaching.
- New public opinion surveys in Israel show that teaching mathematics and sciences is especially attractive to people looking for a second career. However, there is disagreement over whether training programs developed for such candidates succeed in integrating them into the schools.

In light of the above, the foundation must carefully consider what role it can play in improving the situation and how it can best cooperate with the government in recruiting a new generation of mathematics and science teachers. The foundation must ensure that any training or development programs it supports uses a competitive process to accept only qualified candidates, is based on the clinical approach and practical content including documentation and practice teaching, is in line with empirical data regarding the learning progress of students, employs a staff of experienced high school teachers, and includes a sizable component of in-school mentoring by senior “master teachers”.

## **INVESTING IN PROFESSIONAL DEVELOPMENT OF TEACHERS LEARNING FROM TEACHERS**

The foundation has set a goal of developing the clinical skills of teachers of mathematics and the sciences. Experience and research from around the world reveal that no other investment in education yields returns as high as the professional development of teachers, though its fruit matures slowly and requires calibration and continuity.

During meetings the council held with teachers, their message was loud and clear – teachers are interested in learning by doing, rather than in theory; they are interested in learning from their own practice and that of their colleagues; and they are interested in learning about and within their own school environment.

Teachers learning from teachers (modeling) must focus on the learning outcomes of students by evidencing and documenting teaching and learning events. This is carried out by the teachers themselves in two possible frameworks – one consisting of teachers in the same school who work with a particular student or class; the other consisting of teachers who teach the same subject either in the same school or the region.

During the discussions, council members expressed the opinion that the foundation would have to ensure that any professional development program it supports include the following: the content of the program should be based on analysis of student work and learning progress; the teachers should observe each other in their classrooms and provide each other with feedback; the teachers should analyze together with their colleagues videos taken while they teach; and teachers should discuss possible solutions and ways to improve teaching and learning in the classroom.

The foundation should take into consideration that a number of building blocks for the clinical approach to professional development of mathematics and sciences teachers are largely missing in Israel and must be put in place in order to succeed. It is essential that the foundation weighs if and how it can assist in creating the following elements:

- A teacher training cadre made up of teachers who bring with them practical expertise, are adept in focusing on the learning of students, are familiar with monitoring and evaluating learning methods, and are trained to adapt teaching techniques to the needs of each student.
- An echelon of senior teachers (master teachers) who can educate teachers in their school, can serve as role models, and oversee school-based professional development processes.
- Content and tools fabricated from within teacher practice, including, among other features, case studies; video recordings; simulations; monitoring and analysis tools; methods of mentoring; and routine cycles of continual improvement.

The foundation may want to plan how to spread clinical models of professional development throughout the educational system to remain in use for a long period of time. To do so, during its second stage of operation the foundation may want to consider establishing an *Institute for Advanced Teaching* that will be used as a national center of expertise. Such a center would nurture a cadre of master teachers, develop the tools and methods for clinical professionalism, and continue to guide learning groups and professional communities of practice.

### **PROVIDING COMPREHENSIVE SUPPORT NETWORKS FOR IMPROVEMENT OF SECONDARY SCHOOLS (GRADES 7 TO 12)**

The foundation has defined success as an increase in students choosing to study in the five unit mathematics and science tracks in secondary school and successfully completing the matriculation exam. This definition has until now led the foundation to concentrate most of its efforts on upper-secondary elective courses.

In contrast, most speakers during the council meeting said that the foundation should broaden its activities to include middle schools and act in a systematic and systemic manner in six-year schools (grades 7 to 12). This received wide support and was expressed in a number of different manners, which are listed below:

- Six-year secondary schools are one administrative, organizational, and pedagogical unit. They base their activities on the same teaching and learning approach and create a learning continuum through all the grades.

- Gaps widen during middle school because of large classes and diversity, an extensive curriculum, and the difficulty teachers have in being expert in all fields of the sciences.
- The foundation's ability to influence teachers and students in upper secondary schools is limited – teaching and learning are oriented towards preparation for the matriculation exams, teachers are already experienced and effective, and there are too few students in a class.
- Schools in Israel are already satiated by external projects that come and go, leaving no lasting impact. Only actions originating from within the school and taking place in it and are based on existing resources, have a chance of being integrated into the system in a sustainable manner.

In this context, the assertion that it is not enough to recruit talented people to teaching and provide them with effective training took root and became stronger. It would therefore be essential to build support systems within the schools to facilitate quality teaching and learning. To do so the foundation must cooperate not only with bodies dealing with development and training, but in addition, and for the most part, with people thoroughly familiar with school life and the schools themselves.

An example of the extreme importance of being deeply acquainted with what happens in the schools is illustrated by issues brought up in the discussions by teachers and school principals. Some have the potential to significantly influence mathematics and science studies, and are listed below:

- Physics and mathematics students are especially sought after by the IDF and are constantly being summoned to the draft board for screening and assessment. As a result, they are unable to keep up with their course work.
- Schools compete among themselves for outstanding students. It is not clear what incentive a public school that is not allowed to practice selective admission has to increase its excellence, when outstanding students in any case leave it to attend private schools.
- Science subjects are frequently scheduled during the same period so that students must choose between studying physics, chemistry, and biotechnology. As a result, there is competition among teachers for outstanding students within the school.
- Regulations forbid having more than 18 (some say 24) students in a laboratory lesson, so it is impossible to have more than that number of students in a class.
- Teachers are remunerated according to the number of classes and hours they teach without any incentive to increase the number of students in their classes. It is actually in small classes that they need to grade fewer papers and exams and can devote more time to each student.
- Because there are few class hours and extensive material to cover, the pace of teaching is fast and focused on the matriculation exams. There is no time for

assessing progress, making it even more difficult to carry out investigative experiential learning.

Because of uncertainty about the optimal way to operate in middle schools and how best to create a learning continuum, a variety of recommendations were put forth. The foundation must examine if and how to act on them. A few of the more important recommendations are listed below:

- To establish, together with partners, a summer school program for ninth grade graduates before they enter upper secondary school. This will increase the number of students and eliminate the need to review old material when school begins.
- To forge local cooperation between schools in a network or school district so they can construct together an in-depth model of “school-wide improvement” that will be documented and distributed to other districts and schools in Israel.
- To concentrate efforts on the development of learning materials and teaching methods for middle school that will make learning these subjects interesting; challenging; relevant; and exciting, and will encourage students to continue in upper secondary school.
- To focus efforts on incorporating clinical teaching in large heterogeneous classes in the middle school by using a combination of innovative teaching and learning approaches, such as the “flipped classroom”.
- To focus on building sustainability in schools by developing the teaching professionals who already work there (for example, department coordinators) and relying on existing resources in the school.

The council members came to realize that the foundation should examine if and how it could cooperate in six-year schools beginning in middle school and lasting until the end of high school (grades 7-12). In this respect the foundation should devote continuous efforts on learning about school life and its influence on mathematics and science studies.

## CONCLUDING ISSUES TO EMPHASIZE

- A. **Teachers first.** Council members complimented the foundation on its decision to involve teachers at key junctures in the foundation and in the Advisory Council, where the majority of members are teachers. Establishment of “the teachers club” to advise the foundation and including teachers in the projects supported by the foundation will stand the foundation in good stead. As a foundation that is convinced of the importance of quality teaching, the support of teachers is essential, as is relying on their unique practical perspective. The foundation still lacks data concerning mathematics and science teachers, and in general, is in need of information on their work and salaries, and should operate to acquire this data.

- B. **Collaboration.** The decision of the foundation to spread a positive message is both appropriate and critical – it is important not only to emphasize needs; difficulties; and deficiencies, but to rely on capabilities; resolution; and opportunities. The foundation’s conviction that it is both possible and necessary to work with outstanding teachers in the schools, and that the Ministry of Education is run by talented professionals, who believe in their mission, is contagious. The foundation must continue on this path and strive for continued and close dialogue and cooperation with its partners.
- C. **Mathematics.** Council members believe that the foundation must concentrate now more on mathematics studies, which it has defined as one of its main goals. The rest of the sciences are based on mathematics, which is also a compulsory subject for matriculation, and so is taught to a wider extent and for a longer period of time than the sciences. Council members felt that there is a scarcity of data about mathematics studies, especially concerning the teacher shortage. It is not clear to what extent the lack of a mathematics curriculum in several grades affects mathematics studies, and the perspective of mathematics teachers is missing from the Advisory Council. Furthermore, the foundation must give thought to chemistry, which is extremely important to Israeli industry, and suffers from most if not all the challenges faced by the other science subjects.
- D. **Measuring success.** This subject was not discussed in depth during the council meeting; however, there was some underlying criticism leveled at the foundation’s over-reliance on matriculation exam results. It is advisable that the foundation considers, integrating MEITZAV (intra-school assessment of effectiveness and growth), TIMSS (Trends in International Mathematics and Science Study), and PISA results, especially if it decides to expand into middle schools. It must take into consideration the changes planned for the PISA exams, which will move them in the direction of investigative learning based on team work. Furthermore, since a goal of the foundation is to promote excellence through investment in quality teaching, it must develop measures to assess instruction, and thus be able to receive feedback regarding if and to what extent its activities promote the incorporation of clinical teaching skills.
- E. **Social networks.** The foundation must increase its efforts to integrate technologies in its operations. Specifically, it must weigh how it can harness the social networks in which its target populations are members. Around the world, and especially in Israel, social networks occupy a central position in human communication. During the council meeting members heard time after time about instances in which students study together in class Facebook groups and teachers use social networks to consult with each other.