



# Building Israel's Future Generation in Science and Technology

## Experts' Recommendations for the Trump Foundation

Effective Research for Impact (ERI)

In the digital era we live in, dizzying technological breakthroughs in the fields of artificial intelligence, machine learning, and big data are already accelerating the rapid pace of change and bringing along with them new challenges and opportunities. Those who acquire the tools and competencies required for these fields will be the leaders who shape and steer the scientific and technological developments in the near future.

Israel is at the forefront of the technological revolution, which is speedily and vigorously approaching. These turbulent waves are encountering an Israel in the midst of a complex period of war and trauma. Thousands of students from the South and the North were evacuated from their homes and attend temporary schools. Students in the Center of the country are attempting to return to the routine of studies, though with a curtailed curriculum and a schedule of reduced hours.

In preparing the Trump Foundation's roadmap for the next decade, we turned to the Effective Research for Impact (ERI) institute. We requested that the institute's researchers interview 18 of the foundation's partners with the aim of receiving feedback regarding its activities to date and recommending desirable courses for action for the future. The interviewees were: Tal Alexandrovitz, Yaakov Amidror, Sagy Bar, Gila Ben Har, Asaf (Pizzer) Cohen, Zehavit Cohen, Eli Eisenberg, Muhana Fares, Hilla Haddad Chmelnik, Noa Heymann, Eugene Kandel, Ami Moyal, Ronen Nir, Varda Ofir, Alan Feld, Kobi Shvarzbord, Sergei Sumkin, and Meirav Zarbiv.

### Main findings

1. The Trump Foundation has succeeded in making a profound impact on the awareness of the education system, teachers, parents, and students. The aspiration for excellence has become a driving force. This is an extraordinary achievement in the education arena and stands out in the philanthropic field, which often focuses on the supply side and responding to demand.
2. The Trump Foundation stands out for its ability to initiate very wide-ranging systemic change processes, both with respect to the five-unit target for high schools and in increasing the number of excellence classes in middle schools. The foundation has driven government policy, and all the entities involved in its implementation.
3. As part of these processes, the foundation implanted deep pedagogical infrastructure into the education system, including adaptive learning, online learning systems for students in the periphery, establishing professional learning communities for teachers, and new teacher training programs.
4. The Trump Foundation's organizational DNA is its ability to identify national needs, develop innovative solutions for them, recruit many partners for action, and create a strong reputation and positioning that grants access to decision-makers and drives sustainable change.
5. Looking ahead to the next decade, the main recommendation for the foundation is to adapt the education system so that it can prepare the coming generation of scientists and developers for the artificial intelligence age. This should be carried out through a significant upgrade of content and teaching methods, and by creating partnerships with the fields of science, high-tech, and the defense industry.

6. In terms of learning content, emphasis will need to be placed on statistics, data science, and linear algebra. To reach a broad scope of activity, there will be a need to invest in training new teachers, developing advanced teaching capabilities and create online tools for self-learning.
7. Substantial emphasis will need to be placed on acquiring the learning skills necessary for success in the modern workforce, particularly on: independent learning, problem-solving ability, and teamwork. To this end, it will be necessary to enrich and diversify teaching and learning methods and to adapt methods of assessment and examination.
8. Regarding emotional skills, most of the interviewees did not assign high priority to this area. They believe that the system is overly burdened with these issues. However, they do believe that attention should be given to enhancing the sense of self-efficacy and coping with failure, particularly among female students.
9. The foundation should consider dedicated activity in the social periphery, including building up advanced teaching capabilities and access to quality education for excellence. Such an investment has social and moral significance, not to mention its contribution to the needs of the labor market.

### Interviews – Main points:

1. Tal **Alexandrovitz-Segev**, Strategic Communications Consultant. In the coming years, Israel's defense industry will be the focus and receive high priority. The same skills needed for high-tech are also relevant for military technologies. The foundation should create collaborations with the defense industry, as it did with the high-tech industry. The foundation has a unique ability to drive the entire state of Israel toward solving problems and building capabilities, and it must act on this now.
2. Yaakov **Amidor**, former Chairperson, National Security Council, Prime Minister's Office. Israel must continue to be at the forefront of technology. There is a need for skills in estimation and assessment, the ability to formulate and ask questions, and a broad knowledge of the world. The foundation should ensure that all these endeavors begin at a young age, already in kindergarten, and identify the gifted in the periphery as well as in the ultra-Orthodox sector. Likewise, outstanding scientists must be located and returned to Israel, and laboratories and research infrastructure must be built for them.
3. Sagy **Bar**, CEO, Cyber Education Center. The artificial intelligence revolution is expected to substantially change teaching and learning in schools. Students must learn using an approach that enables flexibility and which incorporates, alongside educational content, learning skills such as problem solving and artificial intelligence. Upgrading the education system is likely to expand the gaps, especially in the periphery and among female students in the religious sector. The foundation should ensure that applied skills are integrated and upgraded in response to the artificial intelligence revolution.
4. Gila **Ben Har**, former Executive Director, Center for Educational Technology (CET). Students lack the fundamentals of reading comprehension and digital literacy, which are required for advancement and to prevent the creation of gaps. A great challenge is recruiting and training teachers to become experts in the new technologies and at the advanced levels, especially in the periphery. Students were harmed due to the war, their ability to pay attention and concentrate was damaged. The foundation should ensure that the system identifies outstanding students at an earlier stage and that they study in small groups.

5. Asaf ("Pizzer") **Cohen**, former Deputy Commander, 8200 Unit, IDF. In the coming years, the most important skills will be quick independent learning, the ability to collect and process information from different sources, to identify the important points, and to create new patterns and original ideas. Students need hands-on experience, they need to investigate, critique, and create on their own. The foundation should focus on developing independent learning abilities and information processing, while encouraging collaborations with the high-tech industry.
6. Zehavit **Cohen**, Researcher of mathematics teaching, Technion. The endeavor to link mathematics to the real world finds curious and interested students. The male students relate well to the complex mathematical aspects while the female students see importance in the possibility of mathematics to improve the society in which we live. The foundation should continue the actions it took in recent years and grow excellence starting in the middle school stage.
7. Eli **Eisenberg**, former Senior Deputy Director General, ORT Network and Head of the ORT Administration for R&D and Training. The technological era, in which knowledge is processed by computers, raises the importance of skills among human beings. To excel, people need the ability to learn independently, for teamwork, the ability to solve complex problems in an environment of uncertainty. The Trump Foundation must influence government policy by establishing a national council for science and technology and formulating educational strategy for the age of artificial intelligence.
8. Muhana **Fares**, former Head, "5X2" Project, Ministry of Education. The indices of excellence in Israel have been advancing in recent years; now, the effort must be continued and deepened. Cooperation with local authorities should be expanded, parents involvement should be increased, more excellence classes opened, especially in the periphery. The foundation should focus on new-world skills and collaborate with the Ministry of Education to implement them into the curricula and municipal model.
9. Alan **Feld**, Partner, Vintage Investment Partners. In the coming years, the artificial intelligence revolution will make knowledge highly accessible. People will need to possess critical thinking skills, as well as the ability to present positions and explain them clearly. The ultra-Orthodox learning method, the *havruta*, is better suited to the type of joint learning needed in the current era. It is recommended that the foundation focus on methods of learning and teaching, and that it assist the education system in making the transition from frontal teaching and memorization to inter-disciplinary learning, group discussion, and learning for the love of it.
10. Hilla **Haddad Chmelnik**, former Director General, Ministry of Innovation, Science, and Technology. In the coming years, the artificial intelligence revolution which is approaching will be a "tsunami." The education system will need to place emphasis on mathematics, statistics, and linear algebra. The mathematics curriculum must undergo an upgrade. The challenge will be to train good teachers on a wide enough scale. The foundation should drive the project to adapt the education system to the artificial intelligence age.
11. Noa **Heymann**, former Deputy Director, Budget Department, Ministry of Finance. The education system is not prepared to promote excellence on a large scale, and it lacks the flexibility and administrative capacity to support it. Educational authority should be decentralized to local authorities and schools; regional centers of expertise should be created. The foundation should build deep cooperation with the Ministry of Finance to promote structural reform of the education system and to develop innovative models which can be expanded and sustained over the long term.
12. Eugene **Kandel**, former Head, National Economic Council, Prime Minister's Office. The task of

doubling the number of high school graduates with five units of mathematics was relatively easy in contrast to the change expected in the labor market. Israeli students will need to possess the ability to learn quickly, adjust swiftly, and engage in teamwork. The education system requires radical change, including the cancellation of all matriculation examinations except for language, English, mathematics, and computers, and it should employ distance learning. The foundation should promote excellence in mathematics and science, while also integrating the humanities, creativity, and curiosity.

13. Ami **Moyal**, President, Afeka Academic College. The coming years will be characterized by great change in the labor market in light of the artificial intelligence revolution. Workers who are skilled in using AI tools will be in demand. The education system must focus on imparting these tools and nurturing skills in critical thinking, teamwork, ability to present to an audience, and independent learning. The foundation should work to establish a national council for science and technology, expand the circle of excellence, and focus on skills.
14. Ronen **Nir**, Managing Director, PSG Equity. Due to the rapid changes taking place, it is difficult to predict the skills the labor market will need in ten years. Therefore, applied skills are needed, such as the ability to learn independently, teamwork, solving complex problems, and the ability to cope with difficulty and failure. The foundation should turn its attention to pedagogical change and help the education system transition from teaching by the teacher, to independent and group learning with the help of technology.
15. Varda **Ofir**, Director, Central District, Ministry of Education. The focus on excellence is appropriate only for high school. At younger ages, the ranks should be opened up, and excellence classes should not be created. There are fundamental skills that should be imparted prior to embarking on the race towards excellence, such as compassion, cooperation, and social responsibility. The foundation should apply a more holistic approach to excellence which gives status to the values of equality and inclusion and expands beyond the STEM fields.
16. Kobi **Shvarzbord**, Physics Teacher, Leo Baeck High School, Haifa. Today, exposure to scientific fields at a young age is insufficient. Excellence classes should be expanded, and teachers' professionalism should be improved especially in physics and computer science. The foundation should deepen its work in middle schools, create prestige around these schools, offer incentives for quality individuals to become middle school teachers, and promote teacher communities.
17. Sergei **Sumkin**, Senior Researcher, Aaron Institute for Economic Policy, Reichman University. The designation of "high-tech matriculation" as a government target backed by significant resources is a considerable achievement. The great challenge now is translating this target into practical programs and managing their implementation well. Artificial intelligence will upgrade high-tech matriculation studies, and this is a big opportunity. The foundation should closely support the government in the implementation, ensuring data-driven management, and inter-sectoral cooperation.
18. Meirav **Zarviv**, Deputy Director General and Head, Innovation and Technology Administration, Ministry of Education. The changes required to adapt the education system to the era of artificial intelligence will face a shortage of skilled teachers. The education system is unable to keep up with the pace of change coming from the world and the high-tech industry. The challenge is particularly acute in the periphery, due to the great shortage of teachers and equipment. The foundation must assist in assimilating new-world skills, developing assessment measures, training teachers, and promoting excellence in the periphery.

