# Experiment in Integrating Social Projects into Excellence Classes

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The main activity of the Trump Foundation in middle schools focuses on expanding the circle of excellence in mathematics and science education. Since 2018, the foundation has concentrated on developing approximately 600 educational tasks aligned with the conceptual framework of PISA, training 1,700 teachers to teach the new task content, and opening about 250 additional excellence classes across the country.

Alongside this effort, the foundation sought to conduct an experiment in integrating social projects into excellence classes. Four objectives were set for this experiment:

1. Gaining practical experience in applying mathematical skills defined at levels 5-6 of PISA's mathematics framework.
2. Utilizing skills defined by the Education 2030 framework which are not measured by the PISA assessment, such as teamwork, communication, and presentation.
3. Increasing students' motivation to study in excellence classes by demonstrating the practical use of mathematics in addressing real and important problems.
4. Creating a sense of "scientific leadership" among excellence students and fostering understanding among the public that Israel's circle of excellence has a social and ethical mission.

Through a portfolio of six programs operating in 60 classes across the country, the foundation experimented with various methods used in both formal and informal education. These programs incorporated projects where students in excellence classes utilized their mathematical and scientific knowledge to tackle social, community, and environmental challenges.

The initiative was documented and evaluated by Dalit Stauber, former Director General of the Ministry of Education, so as to examine whether and to what extent the stated goals could be achieved and whether and how the Ministry of Education could take on these activities over time and on a broad scale.

**Main findings**

1. Generally, the programs were enthusiastically received by the students. Problem-based learning (PBL) accompanied by consultation with knowledge experts is an important learning method, which unfortunately is not widely practiced in the Israeli education system. This approach proved its value in developing creative thinking, sparked interest and engagement, and allowed for a productive and creative learning process. Most students chose to focus on social challenges, and the research stages exposed them to hardships that elicited sensitivity and empathy. The students noted that emotional involvement was significant for them and created motivation to apply their talents toward social goals.
2. Alongside the great importance of fostering entrepreneurial thinking and its contribution to 21st century skills, a well-known tension (commonly seen in industry) emerged between the goals of product-focused thinking (mainly efficiency, speed, and feasibility) and the intellectual goals set by the foundation in the field of mathematical

excellence. In most cases, the excitement and the playful nature of the design and production processes, as well as quick rewards overshadowed the intellectual aspect, shifting the focus towards entrepreneurship.

3. Due to many logistical challenges within the education system, exacerbated by the security situation, some programs had to forgo assessing participants' mathematical abilities, and thus did not focus on developing creative mathematical thinking but rather used mathematics as a practical tool for problem-solving. In the programs involving Mofet Excellence Class students or students from science excellence classes, a high level of creative thinking and intensive use of mathematics and physics was demonstrated.

4. Nevertheless, in all programs, academic advisors embedded modeling skills in an attempt to optimize participants' abilities, in line with PISA's objectives.

5. Across all programs, it was found that the vast majority of mathematics and science teachers were not accustomed to creative thinking, adhered to "safe" practices, and discouraged students from making mistakes as part of the learning process. This professional deficiency significantly limited their ability to foster critical thinking and challenge students to use mathematical knowledge creatively.

6. All programs showed improvements in teamwork, time management, and presentation skills, but no development of dialectical thinking was identified.

7. None of the programs used measurement and evaluation tools, relying instead on basic feedback practices. Indication of the improvement trend was based only on a gut feeling.

8. The foundation's experimental initiative, across all programs without exception, demonstrated that it is possible to conduct a fascinating and challenging learning process that strives for excellence while also promoting engagement, enthusiasm for science, joy of learning, and the development of intellectual and emotional national benefit of such a program. However, it is clear that managing complex learning processes on a national scale requires development and logistical resources that only the Ministry of Education can provide.

9. If the Ministry of Education determines that the model developed by the foundation and its partners is suitable for nationwide implementation, in order to promote mathematical and scientific excellence among middle school students, professional support can be provided along with the development of a structured method for managing the process. The development must include definition of requirements for the program operators, including creating the necessary adaptations for the different sectors of Israeli society.

10. It is recommended that the Science and Technology Administration be involved, as it possesses the capacity to allocate teaching hours to this program in excellence classes, and to allow principals to choose the organizations that meet the professional requirements through the Gefen program (provides flexible, discretionary budgets for school principals and local authorities to implement educational goals).