THE TRUMP FOUNDATION
קרן טראמפ

Curricula and Materials in Middle Schools:

Insights from a US Study Tour

2018

Curricula and Materials in Middle Schools: Insights from a US Study Tour

After seven years of activity and towards formulating a "roadmap" to reinforce excellence in middle school mathematics and the sciences, Eli Hurvitz, Naama Axelrod Tayer, and Lena Raved (of the Trump Foundation), together with Edit Yerushalmi (Weizmann Institute), Talli Nachlieli (Levinsky College), and Michal Ayalon (University of Haifa) set out for a study tour in the United States.

We took advantage of the AERA Annual Meeting in New York to meet with education experts, to visit educational institutions, and to learn about research and practice in the field of teaching middle school sciences and mathematics. We met with Pamela Grossman, Arthur Levine, Paul Cobb, Karen Hammerness, Janine Remillard, Peggy Brookins, John Hattie, Hilda Borko, and others.

Additionally, we visited the Advanced Math & Science III School (New Visions Network) and Paramus High School, the headquarters of the RELAY School of Education and STEM Teachers NYC (Columbia University).

Main insights

- It is preferable to organize educational content around big, central ideas. This helps students to create links between different concepts.
- However, procedural fluency is prerequisite and critical. Students must know how to make use of a given procedure in various contexts as well as how to choose the one procedure from among those available that will be more appropriate and effective for solving the problem at hand.
- There is a claim that tasks assigned to middle school students are not sufficiently challenging, they do not convince them to invest and do not drive them to excel. In weak schools, the proportion of high-level questions is even lower.
- Alongside content knowledge and procedural fluency, it is important to also relate to other skills and abilities needed for academic studies and the labor market. These include complex processes of problem-solving, reasoning, proof, interpretation and transfer between different fields, as well as social and communication competencies involved in teamwork and collaboration.
- There is an inherent tension between in-depth learning and broad coverage of the material. The trend now, globally, is in the direction of quality at the expense of quantity.

- Therefore, the professional development of teachers should take into account the above issues. It must not neglect the focus on teaching materials. It is recommended that the professional learning communities of teachers should; analyze together the relationship between the curriculum and the tasks given to students; expose misconceptions that can be identified via various assignments; and transform them into challenging ones, which develop high-level thinking and comprehension.