EXCELLENCE AND THE ISRAELI CHARACTER – CAN THEY GO TOGETHER?

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"Set thee up waymarks, make thee guide-posts" (Jeremiah 31:20)

PROLOGUE FOR TWO

It was a Friday morning in early summer. The school year had lazily drawn to its end, offering a quiet moment for a conversation with an education leader who had only entered his position a few months earlier. My conversations with him are always profound and open; this one was no exception, but it nevertheless proved to be special. "I think it's really important to expand the circle of excellence in education," I began. I intended to go on to present worrying figures showing that fewer and fewer students are reaching an excellent standard in mathematics and science in the international tests and in the matriculation examination.

Before I even managed to take the slides out, he gave me a stern stare. "When you say excellence, I hear 'grades,' and if there's one thing I plan to struggle against, it's what you said right now." I was horrified to hear someone in such a senior position say something like that. I quickly fired back: "When I hear 'excellence' I hear Zionism" (the two words sound similar in Hebrew). Meanwhile I was thinking to myself that the conversation could hardly have gotten off to a worse start, but once swords have been pulled out of their sheaths, there's no going back.

"I'll play along with you," he responded. "Let's say that a decade from now, one-fifth of Israeli students will excel in math and science. In what sense will that make Israeli society better?" I immediately replied: "In the twenty-first century, math and science are the cornerstones to solving the big problems facing humanity. Medicine, food, the environment, and security – for all of these we need extensive knowledge and skill in math and science. As a country that has built itself on science and hi-tech, human capital is our primary asset. It is our relative advantage, and we're about to lose it."

I sat back in my chair, convinced that my argument that "the Law shall come forth from Zion" would convince him and we would be able to move on. Instead, he flatly informed me: "You're wrong. You don't really understand the role of education." As he sees it, the purpose of education is not to prepare students for the work market, meet the needs of the economy, or solve the world's material problems. Rather, it is to develop thinking, considerate citizens with values. "The purpose of education is to create a model society based on values and equality. Your approach only widens the gaps in society," he scolded me.

"My approach widens the gaps?" I screamed politely. "When we told children from the periphery for years that they should make do with the basic threshold of eligibility for matriculation, not enabling them to study for five units, we created the gaps with our own hands. Their parents don't have connections to circumvent the problem. It's their fundamental right – and our moral duty – to enable them to excel and break through." At this point I dragged out statistics showing that eligibility for matriculation no longer provides a significant advantage. Those who have realized this, aim to obtain high-quality matriculation certificates, including five units in math and English, and one in the sciences.

"I'm not against excellence," he retorted, retreating part way from his opening position. Then he continued, "But excellence isn't only in math, it's also in literature or in volunteering. Everyone

has some area where they excel. Education must identify and nurture that area." I felt that he had taken an important step toward me, creating room for consensus. But then he added: "But I know how it will work in the school. Math and science will suck up all the attention and become a desert island overshadowing everything else. You will give them high ideas and raise the bar above their capabilities. Many of them will fail, so all they'll get out of it will be another unnecessary frustration."

I was taken aback, but I focused on his comment that he wasn't against excellence. In math, subtracting from a negative sometimes equals a positive. So I responded: "How it happens in schools is the bit where leadership and responsibility take over." I argued that a school that cracks the five units nut can develop a culture of excellence that spreads like a ripple and sets down firm roots. "After all, the choice isn't between math and literature, but between excellence and mediocrity. Between professionalism and amateurism." I finished my comments in high spirits, convinced that we were moving toward common ground.

He reiterated: "I admit that in mathematics and science you learn to aim high, to make an effort, to invest, and to persevere. Brick by brick, you build knowledge and skill, learning to cope with difficulties through determination and creativity." I seized the opportunity: "Those are qualities that will be important to the children in preparing for the life that lies ahead. Education has an important role to play in building these character traits." He sat back in his chair, reflecting on my comments, before remarking: "It's interesting that in Hebrew the word 'book' and the word 'number' come from the same root."

As I was leaving, and just before we wished each other Shabbat Shalom, he turned to me quietly. "I think it's against human nature to force students to choose between a humanities track and a science track." I responded enthusiastically to this insight, remarking that the great intellectuals who preceded our area – from Pythagoras through Da Vinci and on to Solzhenitsyn – combined math and science with music, architecture, and literature. "Let them rest in peace," he snapped back, holding the door knob firmly. "They were the special few – we have to worry about everyone, and the burden of proof rests with us." And so we parted to continue on our common journey.

WHAT IS EXCELLENCE?

How did the lofty human quality of "excellence" come to be the source of so much controversy among educators in Israel? Is this a global phenomenon, or did we manage to create our own strange mutation, as sometimes happens when things are translated into Hebrew? I realized that I would have to go back to the sources and move forward in giant steps in order to understand how things evolved. In other words, I decided to try, with my limited capabilities, to clarify why we have so many words from the same Hebrew root, such as excellence, distinction, grades, and Zionism, yet so little agreement about what they mean. For a philanthropic foundation such as Trump, which devotes its attention and resources to promoting excellence in education, this is a particularly fundamental and important question.

EXCELLENCE AS A MULTIDIMENSIONAL IDEAL

The ancient Greeks referred to excellence as *are`te*. This was the supreme quality, the summit of humankind and humanity, and it was reflected in the individual's acquisition of extensive knowledge, professional skill, a high level of performance, and proper moral conduct. The sages of Athens declared that this quality is inherent in all humans – if not from birth, then through real effort as a habit and a way of life. This quality may be acquired, but only through study, practice, grit, determination, and perseverance.

This perception focused on the image of the all-round individual who required a broad and general education and strong skills in numerous fields. The foundations were mathematics (the intellect), music (the emotions), athletics (the body), and ethics (the soul). This approach

produced such giants as Pythagoras, who not only offered mathematic innovations, but also used them to revitalize the field of music. He found the formula for combining two contrasting sounds to create a pleasant harmony. Thanks to Pythagoras, the music we listen to today is not monotonic.

The Greeks saw excellence as a constant aspiration for human perfection, manifested in harmony and balance between knowledge, skill, human qualities, and values. Accordingly, they needed an education system capable of selecting the best candidates for advanced and in-depth studies. This is the essence of a meritocracy, where those who excel advance up the social ladder to leadership positions. The top rung is occupied not by the richest person, or the one with the best connections, or the strongest one. Instead, society seeks to be led by those who excel in all they do.

EXCELLENCE AS AN INFINITE SCALE

Asa Kasher, a recipient of the Israel Prize, has examined the subject of excellence in depth.[1] He suggested: "Excellence is not a wreath of laurel leaves, permanently decorating the head of someone who has excelled in the past… Those who confine themselves to this definition… will eventually realize that they are actually wearing a wreath of parched brown and disintegrating leaves… Such a wreath must be won… over and over again, each time anew." Kasher adds: "Excellence is granted in a measured manner… it is not infectious and it should be revealed in each field in its own right… It lies in the eyes of the professional beholder."

According to Kasher, "excellence" is "a five-point scale," in which "only the top rung constitutes the stage of pure excellence:"

1. The first stage – developmental excellence. This is a person's individual development relative to their own capabilities and performances in the past. "But it is important to remember," Kasher emphasizes, "that a comparison between a person's achievements today and their achievements yesterday or the day before, however important and positive this may be, still does not constitute the essence of excellence."
2. The second stage – comparative excellence. This is a competition between individuals, groups, and organizations, in which excellence rests with the one that comes first, faster and better than the rest. "It is worth noting," Kasher adds, "that the aspiration for comparative excellence can be dangerous… raising one's own stature by humiliating others, and this is one reason why this is only a second stage, and not the ultimate stage."
3. The third stage – skillful excellence. This is the ability of a person or organization to cope with a new and unusual problem that has not previously been encountered. "In order to solve the problem properly," Kasher suggests, "the person or organization must make a real effort and move ever closer to the limits of their capabilities… But nevertheless, abilities differ from one person to the next."
4. The fourth stage – substantive excellence. This is absolute excellence measured according to objective standards, and requiring overt skill, profound understanding, and loyalty to values and ethics measured against a clear yardstick. "In this stage," Kasher explains, "we are no longer talking about a comparison between someone's current and past achievements, nor about someone's achievements compared to those of their peers or compared to their skills and abilities, but rather about an objective threshold."
5. The fifth stage – pure excellence. This excellence can only be attained by those who have successfully reached the fourth stage, but it requires two additional qualities. Each of these qualities is far from common, and their combination is particularly rare. These qualities are the courage to excel and modesty.

[1] Asa Kasher, "On Excellence – In Education, Too," *Al Hagovah*, 2, p. 48, March 2003, pp. 48-51 (in Hebrew).

> "Pure modesty," Kasher says, "demands overt loyalty to high standards of knowledge and skill, understanding, sophistication, and ethics… The pressure of mediocrity, the cynicism of corruption, and the frivolity of triviality all make it harder to adhere to substantive excellence… This excellence is not based on material motives but on a supreme obligation… The reward of a commandment is the commandment itself, and the reward of excellence is excellence."

EXCELLENCE AS A PERSONAL JOURNEY

Educators in Israel sometimes make a distinction between "excelling" (*hitstaynut*) and "excellence" (*metsuyanut*), mainly in an attempt to praise "excellence" and express reservations about "excelling." Lieutenant Colonel Dr. Itzik Gonen, the commander of the IDF's Leadership Development School, wrote:[2] "Excelling is a performance relative to others, external and limited in its conditions of presence. By contrast, excellence is a relative and internal process for the increasing exploitation of the potential inherent in the individuals themselves."

Those who adhere to this distinction claim that excellent students are exceptional relative to others, and that it is unfair to praise those who have special talents, thereby causing frustration among others who attempt to excel but are unsuccessful. They also argue that, in some cases, particularly talented individuals can excel without making an effort; that the ability to excel is relative and depends on conditions and context; and that every student is fundamentally capable, but leans toward different fields that must be identified and nurtured.[3]

They argue that "every student is an individual and complex being with their own unique needs… They should be regarded as an individual, without comparison to their peers and without fixing standards subject to comparison."[4] However, some of those who seek to nurture excellent students also accept this distinction. They argue that "excelling flourishes when it takes place in an atmosphere of excellence that encourages the members to aspire to realize and expand their potential."[5]

EXCELLENCE AS AN ECO-SYSTEM

All the models of excellence focus first and foremost on the individual, examining the individual's ability to realize their potential, develop, overcome obstacles, reach new heights, and blaze new trails. However, all these models also recognize the importance of an environment that supports the emergence of excellence, a culture that encourages effort, and a system that provides opportunities to excel.

Malcolm Gladwell refers to this as the "ecology of excellence:" "We all know that successful people come from hardy seeds. But do we know enough about the sunlight that warmed them, the soil in which they put down the roots, and the rabbits and lumberjacks they were lucky enough to avoid?"[6] Itzik Gonen writes: "Many people in an organization can be excellent, and the more

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2 Itzik Gonen, "What Can We Learn from Excellent Students (and What Not)?," *Ma'arachot*, 336, 1994, pp. 2-7 (in Hebrew).

3 Yael Fischer, "Excellence in Education: The Theoretical Model and Its Application," *Iyunim Beminhal Uve'irgun Hachinukh*, vol. 29, 2007, pp. 31-53 (in Hebrew).

4 Fischer, p. 49.

5 Shlomit Rachmel and Heftzi Zohar, *Guidelines for Programs to Nurture Excellence and Excelling in Schools*, Ministry of Education, 2010, p. 12 (in Hebrew).

6 Gladwell, *Outliers: The Story of Success*, Little, Brown, & Co. 2008, p. 20.

excellence characterizes more people, the greater the chance that the organization will be more successful."[7]

In other words, in order for excellent people to grow and flourish, they need a system that supports them. This implies a systemic and professional system that includes discipline and exercise, routine and regularities, diagnosis and measurement, and constant improvement. Moreover, such a professional system is able to diagnose those with the potential to excel and to nurture them. It is constructed in such a way that it acts to expand the circle of those who excel and to provide opportunities for all those who are up to the challenge.

BUT WHY MATHEMATICS?

From ancient Greece down to the modern day, mathematics has been regarded as a cornerstone in the construction of "excellence." But why is this so? Why do comparative and screening tests in education almost always include a math test? Why do students who choose to study five units of math, unlike all other subjects, receive such a significant bonus in university admissions? After all, our education system developed historically on the basis of a division between the "humanities" and the "sciences," reflecting different and diverse tracks of excellence. So why is such a strong emphasis placed on mathematics?

The practical reason is that in the twenty-first century, the solutions to the problems facing humanity – finding medicines for diseases, providing food for all, cleaning up the environment, ensuring security, and improving the quality of life – all demand profound knowledge in the fields of math and science.

Moreover, studies around the world, such as those conducted by the economist Prof. Eric Hanushek of Stanford University, have identified a correlation between knowledge and achievement in math and the economic growth of nations, including gross product. An OECD study found a strong correlation between individuals' knowledge, depth, and understanding in math in high school and their socioeconomic status later in life.[8] In Israel, too, math is a component in the admissions tests for higher education, and a long-term study by the Taub Center identified a correlation between the level of math study in high school and future salary levels.[9]

But what is the substantive reason for this approach? After all, in Athens in the fifth century BCE, there was no market economy, no PISA tests, no screening for elite military units, and no hi-tech startups. Yet even then, mathematics was still seen as exceptionally important. Why is this so? Ron Aharoni, a mathematician at the Technion, offered an informed explanation. He identified nine qualities that characterize mathematics and highlight its unique importance in education to excellence:[10]

A. Layered structure. "More than any other field of thought, mathematics is constructed one story on top of another. A mathematical argument… is based on a very large number of stages… and on extensive prior knowledge…"
B. Precision. "The components of the structure are linked by rigid and stable connections… There's no such thing as an approximate proof. Anything that you haven't proved exactly does not exist."

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7 Gonen, p. 3.

8 *Equations and Inequalities: Making Mathematics Accessible to All*, OECD/PISA, 2016.

9 Eyal Kimchi and Arik Horowitz, *The Importance of the Scope of Mathematics Studies in High School for Academic Studies and for the Future Career of Schools Students in Israel*, Taub Center, 2015.

10 Ron Aharoni, "Education in Mathematics Teaching," *Chinukh – She'elot Ha'adam* (eds.: Yeshayahu Tadmor & Amir Freiman), 2012, pp. 103-111.

C. Discipline. "In order to meet the requirements of complexity and precision that mathematics presents, you are not free to engage in daydreaming. A strict discipline of thought is needed."
D. Respect for reality. "You have to respect reality and put it before your desires and longings… You come to realize that there is something more important than you, and understand your place and role in the world."
E. Hard work. "You cannot gain an understanding of mathematics without hard work and sweat. You have to practice solving equations… (in mathematics) the fact that work bears fruit is very prominent."
F. Reliance on evidence. "Mathematical thinking takes place through examples, by generalization on the basis of individual instances, and the abstractions come afterwards by themselves."
G. Lack of deference to authority. "In mathematics, anyone can perform the experiments by themselves… in other fields there are no clear criteria, for better and for worse, so people rely on authority."
H. Skepticism. "Not everything that is considered important is really important. Not everything that people offer you as the truth is really true. And above all: you should always check things for yourself.
I. Beauty. "Mathematics reveals a wonderful and profound order to us, so complex that we can't fully apprehend it."

EXCELLENCE AND THE ISRAELI CHARACTER – CAN THEY GO TOGETHER?

Thus the impression is that, over the generations, the aspiration to excellence has been a lofty and accepted idea, whether by way of an ideal, a scale, a journey, or a culture. Regarding mathematics, too, there is clearly still profound agreement across cultures and periods regarding its importance as a cornerstone for that much-desired excellence. But how does this idea interact with modern Israel, and how does it integrate into Israel's unusual melting pot society, which is consolidating its own identity while in a state of rapid flux?

Nili Cohen, the president of the Israel National Academy of Sciences, considered this question, and dared to ask a heretical question: "Does society have an interest in aspiring to excellence?"[11]

It emerges that the resounding "yes" of the sages of Athens when confronted by this question cannot be taken for granted in Israel. For the Greeks, a supreme manifestation of justice was the desire to build a social system in which everyone would enjoy an equal opportunity to learn and to excel, and where success depended only on talent, ability, and effort. This same approach underlay the establishment of the yeshivas of the ultra-Orthodox world, which produce geniuses in Talmudic study; universities that nurture scientists; and sports leagues that bring forth stars. The United States used this approach to build a dream that every individual – immigrant or veteran, poor or noble – has the opportunity to succeed, as long as they make an effort, persevere, and excel.

As a legal expert, Nili Cohen notes that law and the legal system cannot force a child to excel. "Most legal systems confine themselves to establishing laws that are suitable for reasonable individuals… Even if there were a legal rule demanding 'you must develop your full capabilities,' it would have no value. Law… can create the essential condition but not the adequate condition. Law can oblige us to study, but it cannot oblige us to excel in our studies."

David Harel, a scientist from the Weizmann Institute who received the Israel Prize and serves as deputy president of the Israel National Academy of Sciences, adds:[12] "We talk a lot about excellence, education to excellence, and aspiring to excellence. I don't really buy it. It's not possible

[11] Nili Cohen, "Excellence in Law," *Hapraklit*, 46, 2002, pp. 233-240 (in Hebrew).

[12] Remarks at the Graduate Ceremony of the Faculty of Precise Sciences, Tel Aviv University, June 2006.

to educate an entire class, an entire grade, or an entire people so that they will all excel… Within any group some excel more and others less, and there are also those who don't excel at all, and that's fine – that's the way the world's made."

The perception of fixed mindsets, an innate potential for excellence, is not new. Averroes, who lived in Cordoba in the twelfth century, claimed that "truth" speaks to people at their own level – in a descriptive way to simple folk, dialectically to commentators, and in rational claims to philosophers. He believed that society was divided into three fixed circles between which there could be no transition. Everyone had the knowledge appropriate for them, the education they needed, and the teachers they deserved. Innate talent determines the extent of each individual's potential, as well as their status and fate. Not everyone can excel.

With hindsight, we may form the insight that this approach functioned as a self-fulfilling prophecy and a vicious circle. Even in Greece, excellence translated into success continued to be the preserve of the aristocrats who showed *arete* – excellence. They maintained their status zealously and prevented the circle of excellence from expanding. In Jewish society, the outstanding scholar was given the rabbi's daughter's hand in marriage. In Christendom, scientific tomes were held in libraries in the palaces and monasteries. Thus excellence was passed down by inheritance and preserved as the domain of a social elite.

From ancient Greece through the Golden Age of Islam, this exclusivist approach of elitist excellence reached Renaissance Europe and survived to this day. The English word "excellence" has its roots in the ancient French of the fourteenth century, and originally meant "sublime." Even today, in countries that maintain a nobility, the queen may be referred to as "her excellency." When we want to say that someone or something is unique, outstanding, precise, professional, and well honed, we sometimes refer to it as "par excellence."

There may be those who will feel that this discussion is academic or historical; what does it have to do with our own reality, in an era of democracy and universal education? Those who have this reaction are invited to read the studies published by Israel's National Institute for Testing and Evaluation[13] and by the Szold Institute[14] discussing the correlation in modern-day Israel between parental education and the allocation of students to sets and levels in mathematics studies in high school. Despite all the changes, a profound mathematics border can still be seen in the Western world, including Israel, between a prosperous and well-educated social class and the rest of society.

But before we declare game over and give up, do we really have to feel inferior to ancient Greece? From the Hanukkah story to the European Basketball Cup, we have never been on the same side as Greece. Not to mention the order and strict excellence of Europe, which had its dark times as we all remember, and it can hardly be said to have been a blessing for the Jewish people. And yet Israel is renowned across the globe as a country of excellence, of Nobel Prizes and scientific breakthroughs – the Start-Up Nation, home of hi-tech and innovation. So have we developed our own unique strain of excellence here? Or is our excellence the preserve of an exceptional chosen few?

In order to examine this question, I plucked up courage and invited some 20 interesting people to a meeting over dinner. The participants included outstanding teachers, the heads of educational organizations, presidents of universities and colleges, directors of the big multinational hi-tech companies in Israel, technological entrepreneurs and investors, a former commander of the IDF's elite 8200 intelligence unit, a Nobel Prize winner, and a distinguished journalist. I presented all

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[13] Hagit Glickman & Nurit Lipshtat, *Teaching in Study Groups (Sets) in Junior High Schools through the Prism of Tests*, National Institute for Testing and Evaluation, 2013 (in Hebrew).

[14] Idit Menny-Ikan, Dana Rosen & Keren Dvir, *Mapping Examination Trends in the Matriculation Examination in Mathematics – An Examination of 2007/8-2011/12*, Szold Institute, 2014 (in Hebrew).

with the question: Excellence and the Israeli Character – Can They Go Together? – and the conversation flowed effortlessly.

In my opening comments, I remarked: "The fast-flowing pace of life in Israel distracts attention from some internal contradictions in our basic assumptions and in our worldview. We convey a double-edged message to the younger generation. 'My son passed the exam without studying,' we declare proudly – we admire effortless success, and we are always on the lookout for shortcuts and bypasses. And then we wonder why a child doesn't have the patience to practice and invest effort, and we get mad when he is quick to give up studies at five units when the going gets tough."

"Here in Israel," the journalist commented, "ever since our homemade Davidka rockets saved Jerusalem, we've been ruled by improvisation and by the credo that 'things will work out okay.' Our favored approach is a short effort and sudden brilliance as a quick road to fame. We've learned to use fine-sounding labels to cover our weaknesses, such as 'creativity,' 'daring,' and 'chutzpah.' But qualities that were enough to establish a nation aren't enough to manage and develop it. We're amateurs, and what we need now is orderly management, fact-based decisions, careful processes, and professionalism."

A serial hi-tech entrepreneur who made a fortune from an exit tried to defend our honor: "The State of Israel was built by people who managed to survive the Holocaust. Those who survived were the entrepreneurs, the intrepid and brave individuals who jumped out of the train. We are their children and grandchildren, so naturally we are individualists. We aren't fans of big systems, careful planning, or standing in line. We run away from all that. But the real problem is that today's younger generation, which didn't get where they are from a background of distress and mortal danger, has developed a vicious cycle of laziness that we must smash."

"It's true that we sanctify improvisation," admitted the president of a prominent research institute. "But it goes deeper than that. My Israeli students are outstanding – better than the Europeans – because they do science like they drive on the highway. In other words, they treat the rules as no more than a recommendation. Their disorder and disrespect constitute a huge advantage because that's the only way you can break through barriers. So I would agree that we need to improve the system so that more students can be successful at five units in mathematics, but we mustn't abandon our messiness. Something about our makeshift culture works well."

A university president sitting next to the speaker shifted uncomfortably in his chair. "It's great that students for advanced degrees challenge their professor. I've had similar experiences. But that's not how things are with the undergraduate students. I'm worried that we're resting on the laurels of an education system that no longer functions as well as it did in the past." The Nobel Prize winner quietly added: "It's not just a matter of a declining system; the problem is also due to the growing gaps related to the tribal nature of Israeli society. There are outstanding individuals in the "State of Tel Aviv," but there's also appalling inequality. Once the army used to serve as a cohesive factor, but that's not so true today."

"I can see both sides of the coin," commented the former commander of the 8200 Unit. "The standard of soldiers who come to the unit is rising significantly every year. Every year over the past two decades, I've been amazed to see that the young generation is only getting better. But they come from certain areas and from very specific habitats. Today, when I lead my company's voluntary activities, I can also see the gaps. We are losing a lot of children who could excel. We need to take them, motivate them, and give them a vision for the future and a high standard of teaching."

At this point an outstanding teacher from one of the development towns in the south stood up and chastised us: "Enough already – it's not about the gaps." Everyone was amazed, but she continued: "The real issue is the willingness of the younger generation to make an effort and invest. To succeed at five units you have to practice, train, and sweat. There are no free rides. It's a marathon. The problem with the Davidka is that is looks like a sudden inspiration that anyone could have thought of. We've developed a culture of 'hackathons' where amateurs imagine that they'll be able to come up with overnight solutions to difficult and complex problems."

"In reality," she explained, "the Davidka was actually developed by two engineers who had studied for many years so that they could come up with a technological solution. That's what we need to explain to the students and the parents. That's the path to professionalism. There aren't any shortcuts." A college president reinforced the message: "Schools need discipline. Improvisation by itself isn't the answer – it must be combined with a high level of self-discipline. Apart from that, breakthroughs come from creative people, so it's critical that Israel manage to integrate graduates from the humanities alongside engineers."

The director of a large network of schools agreed: "I'd like to point out that excellence isn't confined to science and technology. You can also find it in art and dance. The more the students are exposed to effort, perseverance, and practice from an early age, the more ready they will be for high school studies at an excellent level. The problem is that our system doesn't support this. We still measure the system based on the low threshold of eligibility for matriculation. The entire culture of our schools pushes students downward toward the minimum effort. But all this is starting to change now, and I'm optimistic."

A college president who served in the past in a senior role in government was less optimistic: "The question is how to move a large system like the education system. A few years ago, the Ministry of Education asked the Finance Ministry to additional funding and the request was turned down, because of the perception that throwing money into education doesn't lead to improvements. So the Ministry of Education decided to make a coordinated effort, and an improvement began. But then a new education minister came along who doesn't believe in effort, perseverance, and practice, and certainly doesn't believe in ambitious objectives and demanding investment."

The former director of a major semiconductors company added: "There are two key words here – crisis and chaos. Everyone pulls together to restore order when there is a crisis, but Israeli society is great precisely because it is disorderly. The paradox is that the government is the only body that can take on this challenge, but the idea of a large, bureaucratic system adopting excellence as its central value is almost a contradiction in terms. So we all have a role to play, around the table and together with the government, to move all the systems in the direction of excellence."

The Israel CEO of the world's largest search engine company concluded the discussion: "The heart of the matter is culture – public culture and organizational culture. That's also the challenge facing company CEOs – how to build an organizational culture of excellence. Israel faces a special challenge and an unusual opportunity: How to build a culture of excellence against a reality of constant threat. How to create a sense of urgency and priority for excellence. How to recruit people to promote excellence like we recruit people to respond to external threats. Excellence is a choice, a profound perspective, and a way of life."

THE CASE OF THE TRUMP FOUNDATION

The Trump Foundation is an Israeli foundation established in 2011 to help the education system expand the circle of excellence in education. The foundation decided to focus on strengthening high-quality education so that growing numbers of students will choose, persevere, and succeed in math and science studies in high school at an excellent level (five units in the matriculation examinations). To this end, the foundation is working to recruit and train a new generation of teachers; to help teachers nurture clinical teaching skills; and to cooperate to develop networks of support for high-quality teaching in the field.

In the context of the insights and dilemmas we discussed above, the foundation is constantly under pressure to be able to prove that the Israeli public sees excellence as a desirable value and that it attaches importance to the study of math and science. The foundation needs to be certain that the study at the level of five units in Israeli high schools meets an accepted definition of excellence and to ensure that the education system responds favorably to the value of excellence and to the goal promoting excellence

EXCELLENCE AND THE ISRAELI PUBLIC

A public opinion poll[15] the foundation commissioned at the beginning of 2012 found that 47 percent of the public believe that mathematics and science are the main study areas the education system should reinforce (followed by English studies, 25 percent). As for the question of how this should be done, respondents under the age of 24 suggested: Drawing high-quality teachers into teaching (36%); enabling teachers to give individual attention to each student (28%); and reducing the number of students in the class (22%).

Another public opinion poll[16] conducted in 2014 found that the Israeli public sees excellence in mathematics and science studies as very important in order to help Israel maintain its advantage at the forefront of technology, science, and research (87%); in order to help the student to develop logical thinking and scientific skills (83%); and in order to open the door to the job market and to prestigious positions in the army (82%). The public attached less importance to the fact that these subjects help to solve humanity's problems (70%) and help strengthen the student's character traits and teach them to cope with difficulties (57%).

Two years later, in 2016, a further survey was held[17] among young people of the ages of 15-17. The survey yielded the following findings:

- Study subjects that students feel are important to invest in at high school are: mathematics and English (82%), computers (33%), and physics (28%). The other subjects secured less than 15 percent support.
- 76 percent of students believe that it is important to take mathematics at the level of five unity and 72 percent stated that their parents encourage them to do so.
- According to the students, the benefit of mathematics studies lies in the advantage in admission to university (80%); the chance of a better future and higher pay in the job market (60%); and the development of their cognitive abilities (55%). Factors mentioned less often by the students included acceptance to army units (38%), interest in the studies (27%), and social prestige (16%).
- 94 percent of students stated that the matriculation examination at the level of five units is difficult. They reported that their concern is that they will not be left with any free time

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15 "Public Attitudes toward the State of the Education System in Israel," Motagim Ltd., 2012 (in Hebrew).

16 "Attitudes toward Enhanced Studies in Mathematics, Technology, and Sciences among Jews and Arabs in Israel," TRI Ltd., 2014 (in Hebrew).

17 "Mathematics at Five Units in Matriculation," Keshet, 2016 (in Hebrew).

(61%) and that the effort is too great (56%). Lower percentages stated that the level is too hard and not suited to their capabilities (30%) and that they do not think they will use mathematics in their adult life (27%).

WHAT IS THIS EXCELLENCE THAT WE SEEK?

In order to answer this question, the foundation turned to the Collective Impact Coalition "Five Times Two," a joint initiative launched by the government, academia, industry, local government, educational organizations, and civic society to promote common action to double the number of high school graduates completing five units in mathematics and science. The partnership with Five Times Two reflected a belief that such definitions should be made in a collaborative and consensual manner, while encompassing diverse viewpoints.

To this end, Five Times Two formed a working group including the Ministry of Education, academic researchers, education professional, leaders of hi-tech companies, and math and science teachers. The working group reviewed and analyzed detailed definitions for the level of excellence in the mathematics and science curricula in Israel and in several other countries, as well as the criteria and threshold definitions of excellence as applied in the OECD's international tests.

On the basis of this learning process, the working group presented a definition which adopts the multidimensional model for excellence, including layers of knowledge, skills, character traits, and moral values. The definition is however not confined to a comparison of one's performance with previous personal or peer achievements, nor to their individual potential, rather than it portrays a substantive external and objective measure.

The proposed formula was adopted by the Five By Two initiative, and later by the national program of the Ministry of Education, and it forms the foundation for the Trump Foundation's strategic plan, as follows:

> Excellence is a high level of understanding, thought, and implementation in which students draw on the knowledge and skills they have acquired and apply these wisely and creatively in order to cope with a complex new situation. This ability entails the acquisition of extensive knowledge, analytical skills, and profound learning, combined with the qualities of curiosity, initiative, and communication and with the values of morality as well as personal and social responsibility.
>
> Students at the level of excellence:
>
> *Knowledge*
>
> A. Gradually build a broad and deep knowledge base enabling them to conceptualize, generalize, retrieve, and implement on the basis of research they have undertaken and models they have formulated for complex situations. They see the different aspects of a problem, are able to formulate and explain precisely their actions and thoughts, and use these to explain phenomena, solve problems, and create new knowledge.
>
> *Skills*
>
> B. They develop logical, spatial, and algorithmic thinking, as well as creative and critical thought. They are capable of planning and explaining the course of an experiment, identifying complex connections between fields, relationships, sources of information, and different representations. They flexibly translate between these fields, selecting, comparing, and evaluating strategies for solving problems and drawing conclusions at a high level of abstraction.
>
> *Character traits*
>
> C. They enjoy challenges and problem solving, assume independent responsibility for learning, and are willing to persevere, invest, and practice, and to cope with difficulties

and situations of pressure while showing grit, consistency, determination and patience. They learn from their mistakes, show a passion for addressing complex, open, and unfamiliar situations, and do so with resourcefulness, creativity and a high level of interpersonal communication and cooperation.

Moral Values

D. They set themselves ambitious objectives and aspire to the truth, solutions, success, and breakthroughs, while internalizing the limitations of science and the principle of doubt. They show integrity, ethics, and decency, as well as tolerance and openness to diverse views 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 act to improve the society in which they live.

DO STUDIES AND EXAMINATIONS AT THE FIVE-UNIT LEVEL MEET THIS DEFINITION?

The ultimate criterion for evaluating students' achievements on completing high school is the matriculation examination. These examinations, together with the psychometric examination, are used as a standard for admission to higher education. However, these examinations are not calibrated and their level of difficulty may vary from year to year. Some people claim that their threshold has risen sharply in recent years, and others suggest that they are not an appropriate tool for evaluating excellence. This debate must be resolved, since these are the accepted criteria for success in the education system.

For a foundation that seeks to expand the circle of excellence, and that relies on matriculation examinations as a key criterion for securing its objectives, this is a fundamental question. With this in mind, the Trump Foundation launched a process of consultation with the goal of answering the following questions: What types of excellence are evaluated in the physics and math matriculation examinations at the level of five study units? How are these compatible with the above-mentioned definition of excellence? What changes have occurred in the matriculation examinations of the past twenty years? And how do these changes influence the profile of excellence tested by the examinations?

The foundation contacted two experts, both teachers by training and practice, who fill prominent positions in the Pedagogic Secretariat of the Ministry of Education in the field of curricula and matriculation examinations. Ms. Irena Wissman is a national physics inspector, and Mr. Genady Aranovich is responsible for mathematics curricula in the Science Division of the Pedagogic Secretariat. The experts were asked to undertake an in-depth inspection of the matriculation examinations at the level of five study units for the period 1990-2014, to analyze the examinations in light of the above-mentioned questions, and to prepare a concluding report.

After the experts submitted a draft and interim conclusions, the foundation contacted a group of 95 leading physics and mathematics teachers in order to receive detailed written feedback. The review included the ranking of each question in the matriculation examination in terms of understanding, transition between different representations, technical skill, and literacy level. In the next stage, 35 teachers met for a day to analyze tasks from matriculation examinations. The final report[18] was based on all these stages and reflected the different perspectives.

According to the report, the matriculation examinations in mathematics and physics at the level of five study units have undergone changes in recent years, particularly in terms of a transition from the requirement to show a high level of technical skill to in-depth learning demanding understanding, high order thinking, verbal explanation, and implementation. Outstanding students in the matriculation examination at five units in mathematics and physics acquire a

[18] Genady Aranovich & Irena Wissman, *A Study of the Matriculation Examination in Mathematics and Physics, 1990-2014 – Findings and Insights*, 2012 (in Hebrew).

profound conceptual understanding, are capable of drawing conclusions, and are able to connect different subjects and engage in reflection.

In recent years, the examinations have become more verbal and complex, with a greater emphasis on understanding the different levels of the questions, mathematic literacy, physical principles, the drawing of conclusions, and connections between subjects. The goal of these changes is to ensure that students are capable of understanding the origins of the question, its environment, and its context, so that in solving the problem they will not be confined to algorithmic action. As a result, the scope of material and the technical algebraic standard required to answer the questions has been reduced significantly.

These changes, however, demonstrate that the exam still focuses on the dimensions of knowledge and skill, and less so on those of character and values. However, the teachers noted that the learning process over the years preceding the matriculation examination requires the students to develop traits such as determination, emotional resilience, and an ability to cope with uncertainty, as well as the values of skepticism, criticism, and ambition. Conversely, neither the performance (matriculation) nor the process (studies) manifest the moral and social responsibility inherent in excellence.

HOW DOES THE EDUCATION SYSTEM RESPOND TO THE ASPIRATION FOR EXCELLENCE?

One of Israel's educational leaders asked me, "Now that we've launched the national program, what do you think the next step should be?" I told him that he reminded me of a marathon runner who has trained for years for the Olympics. The big moment comes, and as he stands on the starting line, he suddenly asks what his next step should be. "Run! Now we need to run!" I told him. In other words, this isn't the time for summaries. The process is at full steam and the dust hasn't settled yet. Now is the time to make an effort, persevere, and maintain discipline during implementation. But nevertheless – what can we say so far?

The numbers point to success. The trend has been reversed: more students are now choosing to study mathematics and physics at a level of five units, and are preserving and succeeding in their studies. The dramatic decline of around 40 percent in mathematics from 2006 through 2012 has been reversed. In physics, the number of graduates has reached its highest point for a decade and is continuing to rise. The impression is that the effort to halt the decline has been successful. The challenge is now is to move from this breaking action to meaningful and sustainable growth. But how have schools responded to this message? That is the question.

I discussed this aspect with five school principals, since they are at the front line of education and encounter reality every day. I discovered a particularly complex and diverse reality. Judge for yourselves:

EXCELLENCE OR SURVIVAL

The first principal reported: "The students understand the importance of mathematics. They recognize the practical side and the benefit for their future, and their parents push them to study." That sounds good, I commented. "Yes, but…" he retorted, "they look for shortcuts. They want to get an excellent certificate without making the considerable effort entailed. We tell them that it's strange to us that they are willing to train and sweat when it comes to sport, music, or preparing for the army, but less so when it comes to their studies."

So what do you do about that, I asked. "We tell them that in our school, they have to choose. They must choose between a track of excellence and a track of survival. You can finish high school with a minimal effort, both on their part and that of the teachers. But those who choose the track of excellence in any field – mathematics, dance, science, theater – must be hardworking and thorough. They are expected to put in a lot of overtime, and our staff will be there for them. It's a matter of choice."

EXCELLENCE FOR NARROWING GAPS

"We didn't even have a track for five units in mathematics and physics," the second principal emphasized. "Our town is part of the country's social periphery, and our focus was on increasing the percentage of students eligible for matriculation. I didn't think they were capable of completing five units, and to be honest I didn't see why they needed that." So what changed, I asked. "Now the first group of students is preparing to take their math matriculation at five units. The more you have, the more you want. Students come to me now and tell me that they want to take five units in physics and Bible, too. And they want the 8200 Unit to come to give them a talk."

I continued to press him. What does all this actually mean to you? "It means that I was wrong to assume that they weren't capable. I did them a disservice by directing them solely to the basic standard. But this change is accompanied for me by a real fear, because my responsibility has been doubled now. My staff believes that it's possible, but they also have real doubts. What will happen if some of the students aren't successful? These are kids who have faced disappointment all their lives – they can't cope with another failure. This obligates the teachers to support the students, help them, and keep their fingers on the pulse all the time."

EXCELLENCE OR NOTHING

The third principal began with a complaint. "Look what you've done to me. Everyone is telling us that mathematics is the most important thing – President Peres, Prime Minister Netanyahu, Education Minister Bennett, television, radio, and the newspapers. What am I supposed to say to a girl who loves music or to the civics teacher or social education coordinator – that they are less important?" Who said they're less important, I replied in alarm. "You didn't say that it's important to make an effort and invest in every field. You said that the State of Israel needs mathematics and science, and that those who don't take five units in these subjects will earn less in the future."

That's true. So what do you do with this? "I tell them that it isn't true, and that they can also succeed in life without five units. I myself studied four units and managed to become a school principal. I encourage the teacher to find the area that appeal to each student and where they are relatively good." So do you offer five units in literature, theater, and music, I asked. "There are all kinds of tracks, but that isn't the point. What matters is that not everybody has to excel and can excel. But everyone needs to lead a meaningful life."

EXCELLENCE COMES FROM INSIDE

"This year we are switching to meaningful learning," the fourth principal began. "We focused too much on achievements and excellence in mathematics and science. Matriculation isn't everything." But last year you told me that you don't think that "meaningful learning" is a serious educational concept. You're a bit behind the times – there's a new education minister now, and the flagship is about excellence in mathematics and science, haven't you heard? "Look," he replied, "tell your friends in Jerusalem that I'm the one who decides what happens in my school, not them."

That sounds a bit like an ego complex, doesn't it? "I don't have any reason to apologize. Long before the Ministry of Education's program, we were a school of excellence in mathematics, science, dance, art, and music. But whether we have five units or not is my decision. The Ministry of Education has political considerations and considerations of rating, and it works with a thick brush and thinks that one size fits all. Every school principal knows best what is right for his or her students. That's why I'm here – not to transmit instructions by remote control."

VALUE-BASED EXCELLENCE

The fifth principal heads one of Israel's most prestigious and outstanding schools. "It simply isn't important enough to be the top priority on the education minister's agenda," he declared. What are you referring to? "You are capable guys. I'm sure you'll manage to change the trend and more students will complete five units in mathematics and science. But those aren't the underlying problems facing education and society in Israel. You are distracting educators from what really matters."

I thanked him for the compliment, but added that I still didn't understand what he meant. "Look," he began, "we are facing rampant racism, intolerance, and tyranny of the majority, as well as rising violence. These are the challenges facing education in Israel. Schools are Israeli society's last chance for changing this. It's our role to educate a different generation – tolerant, volunteering, and rooted in values." But there are schools that define values exactly the opposite to you, I pointed out – what you see as good is bad for them, and vice versa. "Unfortunately you're right. And that only emphasizes the importance of what I'm doing."

AN EPILOGUE ON THE GO

It all sounds too complicated, not to say conflicted, I thought. Who can help bring some order and logic to our discussion? At times like this, I always go to her. With her age, knowledge, and life experience, she's seen it all before. She knows when to get worked up about something, and more importantly – when not to. I showed her what I'd written, eagerly anticipating her clarity and razor-sharp wit. A fleeting look of pity crossed her face before she smiled, sitting back in her armchair. "What do you think?" I asked. "What does all this mean? What can we do?" I asked intrepidly. She responded slowly, almost at dictation speed:

"The question isn't what your worldview is, but what education system we need to build in order to bring the most benefit to everyone." What do you mean? "If we clear away all the verbiage you brought here, there remain three worldviews. The first says that many more can excel. The second recognizes that some people are more talented than others. And the third argues that there isn't one single track for excellence. If you're honest with yourself, you'll surely agree that all three approaches are worthy and correct."

When you put it like that, I definitely agree, I said. "If you start off by recognizing that not everyone can excel, then you also have to provide a response for those who can excel," she continued. "It's possible to build a school where everyone studies at a mediocre level. Some of the outstanding students will run off to private schools, and others will reconcile themselves to their fate and fail to realize their potential. The result will be excellent schools for the excellent, mediocre ones for the average, and bad schools for the weak. That's not good."

So what do we do, I asked. "You can create different study levels within the same school, and then educate each student according to their character. But the danger here is of a downward push. Any time a student is having a difficult time, instead of helping them cope, the easy and ready-made alternative is to move them down a level. The answer to this problem lies in a culture of excellence – one that encourages hard work and a real effort, and that praises achievement. This isn't just a matter for the math teacher – she can't do it by herself. It's something for the whole school."

I immediately retorted that our figures showed a strong correlation between the parents' educational background and economic status and the division of students into different levels of study in mathematics. "That's a problem for sure," she acknowledged. "But if there's a chance of breaking the vicious circle, it can only come in of the kind of school, where everyone learns together and everyone can advance to the highest level. This is also the ethical thing to do, since it promotes excellence and equal opportunities simultaneously."

What about those who claim that mathematics isn't an essential cornerstone in building excellence? "Education has always been expected to provide the foundation, and mathematics is an important pillar in the foundation. In modern reality, too, priority and preference are attached to mathematics. To deny that is to deny reality. It's true that some children have special talents in other areas, and we should nurture those talents. But they are the exceptions. Our task is to build an education system that benefits everyone in the best possible way."

I found the courage to return to the question that had been tossed into the corner: "So I guess we're still left without an answer to those who argue that the role of schools is to educate, not to teach," I said, preparing for a battle of wits. "Drop the nonsense," she scolded me. "Teaching is educating and educating is teaching." She rested her right hand on my shoulder, while her left hand subtly showed me the way out of her house.