**The 5x2 Initiative: Expanding STEM Excellence in Israel**

**Collective Impact as a Model of Collaborative Governance**

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**Abstract**

This chapter describes the 5x2 Initiative, an initiative using the collective impact model to promote excellence in science education in Israel, as a test case for collaborative governance. The chapter describes the establishment and operation of the initiative, which was the first in Israel to implement the collective impact approach. This approach defines operating principles for systematic initiatives intended to solve complex social problems, through a unique partnership between diverse stakeholders. The story of the initiative is presented chronologically, emphasizing the development and characteristics of the collaborative governance mechanisms within the operating components of the initiative. The chapter also describes the process of building relationships and trust between players from the three sectors – a central foundation in promoting collaborative governance mechanisms and in ensuring their ability to operate successfully.

**Introduction**

The story of the 5x2 Initiative begins with a discussion between two philanthropic foundations and a hi-tech company, all of which are important, experienced players in the field of science education in Israel. The three players joined forces due to their shared sense that excellence in scientific and technological education had reached a low point that required raising of the issue on the public agenda. Despite various programs in the field, there had been no change on the national level: The number of students graduating high school with high proficiency in mathematics and science was continuing to fall; the shortage of suitably-trained teachers was worsening; Israel’s performance on international tests remained poor; the gaps between socioeconomic groups had widened; and reports forecasts future economical, industrial, and social demands showed that Israel was on the verge of a crisis (Goldschmidt, 2010; Weissblai, 2012, p. 213; Manny-Ikan & Rosen, 2012, 2013).

The new approach called “**collective impact**” (Kania & Kramer, 2011) drew the players’ attention. This approach attempts to address situations where social challenges persist over an extended period of time despite extensive resources and diverse programs. The approach defines operating principles for systemic initiatives based on a unique partnership between stakeholders from the various sectors – public, business, and the third sector, including philanthropy. The starting point is that only joint action by all the sectors can solve complex social problems. In recent years, the collective impact approach has been implemented to great success in a wide range of initiatives in the US and around the world, and while securing impressive outcomes.[[1]](#footnote-1)

In April 2013, the directors of the three bodies contact Sheatufim, an organization that specializes in leading and shaping processes for cross-sector discourse and action to promote social impact. The directors asked Sheatufim to examine whether a collective impact approach could be an appropriate way to try to create a change in Israel’s status quo with regards to excellence in science education. The Sheatufim team took up the challenge and, after a period of learning and a feasibility study, concluded that it would be appropriate to launch a joint initiative. The 5x2 Initiative was launched in July 2013 and later became the first collective impact initiative in Israel.

Over the five years that have passed since then, around 100 organizations from all three sectors have joined in the initiative. These include educational organizations from the third sector, teacher training colleges, science museums, research and academic institutions, hi-tech companies, the IDF, and representatives of local authorities and the Ministry of Education. Since 2014, the initiative has operated through a unique strategic partnership with the senior management of the Ministry of Education. This led to the inauguration in the summer of 2015 of the National Plan to Promote Excellence in Mathematics and Science.

This article will describe the 5x2 Initiative as a case study in collaborative governance, presenting its development chronologically and according to the various components of its operations. The process of building relationships and trust between the different players – a key part of promoting collaborative governance mechanisms and enabling them to succeed – will be discussed in depth. Lastly, we will present the challenges facing the initiative, which are indicative of the challenges facing collaborative governance in Israel today.

**The 5x2 Initiative: Movement over Time**

**Stage 1: Extra-Governmental Organization (2013-2014)**

A sense of crisis about the state of education for STEM excellence in Israel began to arise in 2013; this came with an awareness of the long-term economic and social ramifications. Extensive data from the education system painted a clear and depressing picture, including a decline of ~30 percent in the number of students taking mathematics at the level of 5 study units[[2]](#footnote-2) between 2006 and 2013; a low proportion of students taking physics at 5 study units; a worsening shortage of outstanding teachers in these subjects; and poor achievements in 21st-century skills as reflected in Israel’s ranking in the PISA international test.[[3]](#footnote-3) These problems were compounded by wide gaps between the center of the country and the peripheral areas, as well as between Jews and Arabs. The gaps had to do both with the number of high school students choosing to study science and mathematics and the achievements in international and national tests. The hi-tech industry faced a growing shortage of engineers, threatening its ability to maintain the growth trend over the coming years. Various statistics[[4]](#footnote-4) suggested an annual shortage of approximately 7,000 engineers, particularly in the fields of computing, together with a growing shortage of engineering technicians in a range of fields.

This reality led the Trump Foundation, which is active in promoting science teaching, the Rashi Foundation, which concentrates on advancing education and welfare issues in the geographical and social periphery, and Intel Israel to join forces to launch an initiative on the national level. Alongside the understanding that this was a crisis situation, these three bodies also recognized that separate action by the education system, business organizations active in the educational field, and third sector educational organizations had failed to secure change on the national level. There was also a growing recognition that the roots of the problem touched on a wide range of factors, including: Ministry of Education policies, school policies, awareness among teachers and communities, student motivation, the shortage of teachers and poor quality of teaching, and so forth. It seemed that long-term change would be possible only by way of partnership between a very wide range of players, with diverse experience and expertise, that would agree on the reasons for the problem and concentrate on actions to secure a common goal.

**The collective impact model appeared to be an appropriate method to this end**. This method, which brings together diverse stakeholders around defined and agreed-upon goals and objectives and which creates infrastructures for their joint and coordinated action, is based on theories of systemic change (Hanleybrown, Kania, & Kramer, 2012). The advantage of this approach is that it offers a practical model for action enabling players from different sectors to join forces to create social impact in order to solve a complex social problem. The model is based on the combination of five components that are maintained simultaneously. It is intended to secure measurable outcomes and is committed to active learning and continual change. The model concentrates on creating effective principles of action that ensure coordination between all the partners and that increase the chance that ideas emerging during their interactions will lead to the solution of the problem (Weber, 2015; Pesta-Shubert, 2015).

**Figure No. 1: The Five Components of the Collective Impact Model**



The state of the science education field was studied in depth during a preliminary learning process (Manny-Ikan & Rosen, 2013), and previous attempts to advance the field were examined. The collective impact model and its implementation in the United States on issues relating to scientific-technological (STEM) education were also examined (Rom, Hurvitz, & Tamir, 2012). At the same time, individual meetings were held with a range of stakeholders in the field. This work yielded three central conclusions:

• **A common sense of urgency**: Different organizations shared the understanding that if the issue was not raised as a national priority, the ramifications for economic growth and for narrowing gaps would be severe.

• **Maturity to launch a joint initiative**: Various organizations declared their willingness to expand existing cooperation in order to create a joint initiative. Ministry of Education representatives also reported that the ministry was willing to open itself up to dialogue and joint action with representatives from the third sector and the business sector. At this time, the Cross-Sector Round Table had begun to operate in the Ministry of Education,[[5]](#footnote-5) and it was evident that cross-sector action was on the ministry’s agenda.

• **The need for intervention by the Ministry of Education**: All the players discussed the vital need for the Ministry of Education representatives to be partners in launching the initiative. The precise characteristics of the partnership with the Ministry of Education were not defined at this stage, but it was clear that this partnership would have to be realized in order to secure change.

The feasibility study stage ended with an understanding of the potential to launch a joint initiative based on the principles of the collective impact approach. A preliminary definition of the systemic problem and its key components was also drafted. The first meeting of the Initiative was attended by representatives from 60 organizations from all sectors, who came out of a sense of commitment, mobilization, and enthusiasm to lead a joint and strategic initiative for change. The first four months were devoted to defining the vision, mission, and key objectives of the Initiative within the framework of the common agenda – the first component in the collective impact approach. It was decided that the Initiative would focus on two key target populations: teachers and students. Specific objectives were defined for each of these target populations, relating both to numerical scopes and to the type of skills needed in order to realize the vision. The definitions were the product of discussions held in the process of building consensus among all the stakeholders, and were formulated as follows at this time:

**Vision:**

By 2025, Israel will be among the top fifteen countries in the world based on the quality of excellence in STEM education, and will be in a position to leap forward as the second quarter of the 21st century begins. High school students from all sectors and strata of the population will exercise their right to study STEM at a high level, thus opening up opportunities for a life full of success, prosperity, and contribution.

**Mission:**

We see our mission in promoting excellence in STEM education, as a driver of a broad educational culture of excellence. We are committed to achieve that, while striving to narrow the social gaps and to provide equal opportunities to every student in Israeli society.

**Task:**

Doubling the number of high-achieving students who display strong inquiry and analytical skills in math, physics, chemistry, and engineering tracks offered in Israeli high schools. In 10 years, at least 20% of all students in each year will cross the national and international standard test of excellence.

At this stage of the process, the participants from the Ministry of Education were mainly professionals from the relevant subjects (mathematics, physics, and chemistry) and teachers. The Ministry of Education did not seek to play a leading role at this stage, but allowed the discourse to progress despite a considerable measure of uncertainty as to how the initiative would develop.

A cross-sector steering committee was established in the first year to advance the initiative. The committee was defined as the policy-setting and decision-making body on the strategic level, and included 18 members from the sectors participating in the Initiative.

The steering committee is the body the leads the partnerships in practical terms. The committee delineates the avenues of action based on the decisions taken in all the partnership and discourse frameworks that operate in the Initiative. An example of this are decisions about delineating which subjects it will promote and focus on (mathematics, physics, chemistry, and computer science) and about the age range to be addressed by the Initiative (junior and senior high school). These decisions were taken by the steering committee based on the need to create focus and priorities for the joint action, and based on the existing data.

The processes of building consensus and making decisions on these issues entailed complex discussions that exposed differences of opinion and diverse worldviews among the different players. Some of the partners felt that the decision to concentrate the activities on post-elementary education might limit efforts to promote an awareness of science and technology from an early age and to encourage interest in science in other areas of society.

Despite the disagreements, the representatives on the steering committee and the organizations that participated in the first stage noted on its completion that they shared two basic assumptions: The first concerned **the added value of the partner network** as an arena that promotes a common language and common messages; enhances the presence of the unique expertise and assets of third sector and business organizations; and creates and enhances coordination, synchronization, and cooperation between the different bodies. On this foundation, a common awareness crystallized that the partner network is vital to securing the goal, and that it will not be possible to create systemic change without it. The second assumption concerned **the role of the state**, and the recognition that only with the clear leadership of the Ministry of Education, manifested in policy steps, would the Initiative be able to advance the common goals and create systemic and long-term change.

**Stage 2: The Ministry of Education Recognizes the Need and Value of a Joint Initiative (2014-2015)**

In November 2013, there was an opportunity to change certain aspects of the partnership with the Ministry of Education. The arrival of a new director-general who had previously been responsible for managing the Cross-Sector Round Table in the ministry, led to an awareness of the value of open discourse with the third sector and business sector in advancing common goals. Senior management at the Ministry of Education also identified the opportunity created by the unique working model introduced by the Initiative across three key axes:

**• Defining objectives on the basis of data analysis created a foundation for substantive, focused discussion and discourse and an opportunity to forge consensus.**

Joint measurement and a data-driven approach form a central component in the collective impact approach. As it began to function, the Initiative mapped the existing challenges and obstacles in the field to the advancement of excellence in mathematics and science. The results of the mapping highlighted the complex nature of the problem and identified trends in the different subjects. Based on a comparative international analysis, it was agreed that the target should be set to double the number of students so that 20 percent of the cohort would be studying STEM subjects at a level of excellence. The analysis of the data conveyed a message regarding the importance of focus and clarity along the way to solving the problem, as well as the need for coordinated management of the initiative and for measurement in order to evaluate the securing of the objectives.

**• The analysis of the complexity of the problem emphasized the added value of cross-sector cooperation and the opportunity to create a broad coalition of organizations committed to the goal and interested in cooperating with the ministry**

The senior management of the Ministry of Education recognized that the Initiative offers a new paradigm for joining forces with the third and business sectors and for mobilizing existing assets among diverse stakeholders, thereby enhancing the prospects for systemic change.

The third sector organizations have acquired knowledge and expertise in grassroots activities with diverse target populations (students, teachers, and parents) and in diverse goals, such as strengthening the knowledge and skills of students in the periphery; encouraging girls to choose science subjects; reinforcing scientific capital; and exposure to the world of science. The business sector organizations brought a commitment to the joint vision due to the real need for high-quality graduates with diverse knowledge and 21st-century skill bases. The organizations recruited leaders of industry to joint action and leveraged their networks of community contacts in order to create a coordinated system for volunteering by engineers in schools around Israel. Given the relations between the Ministry of Education and the third sector and business organizations, which for years had been dominated by suspicion, criticism, and cynicism, an essential starting point was the process of developing trusting relations between the different players. However, the Initiative’s clear perception of the central role of the Ministry of Education, as the responsible body, helped to develop these relations of trust and motivated the ministry to engage in joint action.

**• The importance and contribution of an external integrating body – referred to in the model’s language as a “backbone organization” – was apparent**

The function of the backbone organization is to manage and lead the Initiative and to serve as the body that brings together the diverse stakeholders. It provides the professional platform for managing the contacts and discourse between the partners, promoting the building of trust and consensus. On the practical level, these functions are manifested in daily responsibility for planning, leading, and guiding the processes in order to optimize the decision making; collect information and support mutual learning and updating; and address conflicts, logistics, and administration. The fact that Sheatufim is a player in the field of STEM education and that its expertise lies in shaping and managing cross-sector processes strengthened its mandate and the trust it enjoyed. Both the management of the Ministry of Education and the other players trusted Sheatufim to lead the process from a professional and objective standpoint.

Following these understandings, the Ministry of Education announced that it would be joining the leadership of the 5x2 Initiative. Senior representatives joined the steering committee and the dialogue about advancing the joint objectives stepped up a gear.

In May 2014 the Ministry of Education raised the subject of science excellence as a high priority, deciding to launch the Math First program. The program concentrated on mathematics as the first stage in advancing the agenda of expanding STEM education, in light of the protracted fall in the number of students taking 5 units in mathematics. Alongside the sense of urgency, there was also a perception that as the “queen of the sciences,” mathematics would serve as a catalyst for mobilizing the system as a whole and could also create change in the other science subjects.

The steering committee of the Initiative was required to decide whether to come on board with the priorities presented by the Ministry of Education and focus the actions of the Initiative as a whole on mathematics. Some of the educational organizations opposed the idea of concentrating on a single subject, due to the multidisciplinary STEM worldview. The business sector organizations opposed this direction due to their awareness of the critical importance of physics and technology for industrial needs. Nevertheless, a consensus emerged that it would be right to join the ministry in this focus, in the belief that it would manage to get the system and the partnership moving, so that it would then be possible to move on to advancing the additional objectives.

The joint program was inaugurated in the summer of 2014, in the form of an invitation to 100 schools around Israel that received earmarked budgets from the Ministry of Education in order to increase the number of hours for mathematics studies, as well as various activities intended to encourage students to choose to study 5 units in mathematics and to persevere with these studies. The total annual budget was NIS 15 million, and a special integrator was appointed to head the program.

Turning the Ministry of Education into a leading and key player in this way required a deliberate and conscious effort. The ministry’s decision to take part in the joint leadership and to commit to the objectives defined in the Initiative, to prepare an infrastructure, and to allocate resources was one of the Initiative’s most significant achievements in its first year. It is worth highlighting that the partnership model between the ministry and the Initiative is a unique one, not formalized in a contract but taking the form of agreement on goals and objectives, and a decision to act together while sharing knowledge, data, and long-term planning.

The strategic partnership between the Ministry of Education and the 5x2 Initiative embodies the components that define the Initiative as a case study for collaborative governance. The joint operating model began with the influence enjoyed by extra-governmental bodies in setting the government’s agenda and policy, through the Initiative. The recognition of the need to raise the issue of excellence in science education on the public agenda, and the motivation to launch an initiative on the national level, were the result of involvement by the philanthropic and business representatives, who initiated the formation of the broader partnership alongside additional players from all the sectors. From early on in their shared work, all those involved recognized that systemic change under the leadership of the Ministry of Education was appropriate and crucial. This recognition served as a shared basic value and was a condition for recruiting the ministry to action, for the initiative’s success, and for securing the objectives.

**Stage 3: Common Action – Implementing the National Program for Excellence in Mathematics and Science (2015-2017)**

In May 2015, as a new minister began to serve, the Ministry of Education announced that one of its central policy objectives would be to support the study of mathematics at the level of 5 study units. The ministry allocated NIS 75 million for launching the National Program for Excellence in Mathematics. As part of this process, the ministry acknowledged the great importance of cross-sector partnership, and invited the steering committee of the 5x2 Initiative to serve as the public steering forum for the program.

The national program drove several strategic initiatives along two main axes:

**1. Policy Decisions as a Core Activity of the Ministry of Education**

The Ministry of Education launched several initiatives intended to increase students’ access to mathematics studies at the 5-unit level. These included adding 15,000 teaching hours to enable dividing up classes and enhanced studies; relaxing the criteria for schools to open a 5-unit level track; and opening classes in high schools that had not previously provided mathematics studies at this level. Significant steps were also taken to create incentives for students, including providing a “safety net” for students who were unsuccessful in the matriculation examination at 5 study units and increasing the bonus given to high school students who secure 5 study units in admission to universities.

Another important component was the 2016 publication of the local authorities’ educational statistics. For the first time, the main point of reference for gauging the quality of the local education system focused on the proportion of students receiving a matriculation certificate that included 5 units in mathematics. The publication of these statistics played a very important role in encouraging a policy of excellence, both due to its impact on public discourse on the national and local level and due to the importance of the statistics as a basis for formulating educational strategy in the local authorities.

As part of its partnership with the Initiative, the ministry published the first report of its kind seeking to provide a comprehensive picture of mathematics studies based on a range of existing statistics. The report constituted an important step to creating a shared picture of the statistics. It was designed according to the Initiative’s “road map,” which defined the critical components for success in promoting excellence in mathematics and science.[[6]](#footnote-6)

All these initiatives were intended to create an infrastructure for long-term action by the Ministry of Education, school principals, and local authorities. They reflected the intention shared by the ministry’s senior management and the 5x2 Initiative to ensure that the process of change was systemic, comprehensive, and sustainable.

**2. Strategic Initiatives in Partnership with Third Sector Organizations and the Coalition of Businesses in the 5x2 Initiative**

Alongside the policy changes, the Ministry of Education also launched strategic initiatives in cooperation with the partner organizations in the 5x2 Initiative relating to three key issues where it was agreed upon that the external partners offered clear added value. Thus, for example, organizations with knowledge and expertise reinforced the ministry’s core activities with the target populations of students and teachers, while philanthropic funds provided complementary resources expanding the initiatives and strengthening infrastructures. The Ministry of Education allocated financial resources for the creation of new partnerships and for leveraging and expanding existing ones in accordance with the selected strategic directions:

• **Strengthening quality teaching**: This key need was addressed through both professional development for existing teachers and through creating channels for recruiting new teachers with appropriate education and skills. Associations, philanthropic funds, and universities took part in the main initiatives launched in this field: Expanding the certification of existing teachers to teach 5 units in mathematics; establishing teachers’ communities to promote pedagogic excellence; and extending the program for “teaching support,” which places volunteers in lessons on an ongoing basis.

• **Increasing access for students**: The intention here was to enable students to study mathematics and science at a level of excellence even when the school did not have the adapted study tracks. In cooperation with the partner associations in the Initiative, technological solutions for online learning were extended, such as the “Virtual High School.”

• **Reinforcing students’ motivation to choose**: Data analysis identified the 9th grade as the junction at which students decide on their future course. Accordingly, it was decided to focus on that age in working to enhance students’ perceptions of the STEM subjects’ in terms of relevance to their students’ future. Hi-tech organizations in the Initiative mobilized for action, hosting motivational visits for students to the companies’ offices and recruiting industry engineers and programmers to volunteer in schools. In cooperation with the Ministry of Education, a customized system of activities was established regulating the deployment of volunteering throughout the country, with an emphasis on the periphery areas and on Arabic-speaking schools. This work highlighted the added value of the “coalition of businesses” in the Initiative, and helped to define common messages regarding the importance of STEM studies as stages toward social mobility and integration in the workforce.

**The focused actions to create partnership between the Ministry of Education and third sector and business organizations, based on a joint examination of the central obstacles, thus led to enhanced coordination and an increase in the effectiveness of the common action to advance the objectives.**

The Initiative’s theory of change argues that the complexity of the problem demands systemic changes, not only on the policy level but also in the manner in which third sector and business organizations operate. To this end, the 5x2 Initiative launched several complementary initiatives that helped to create a language, knowledge bases, and common messages. These strengthened the level of synchronization between the different organizations and gave focus to the methods and priorities.

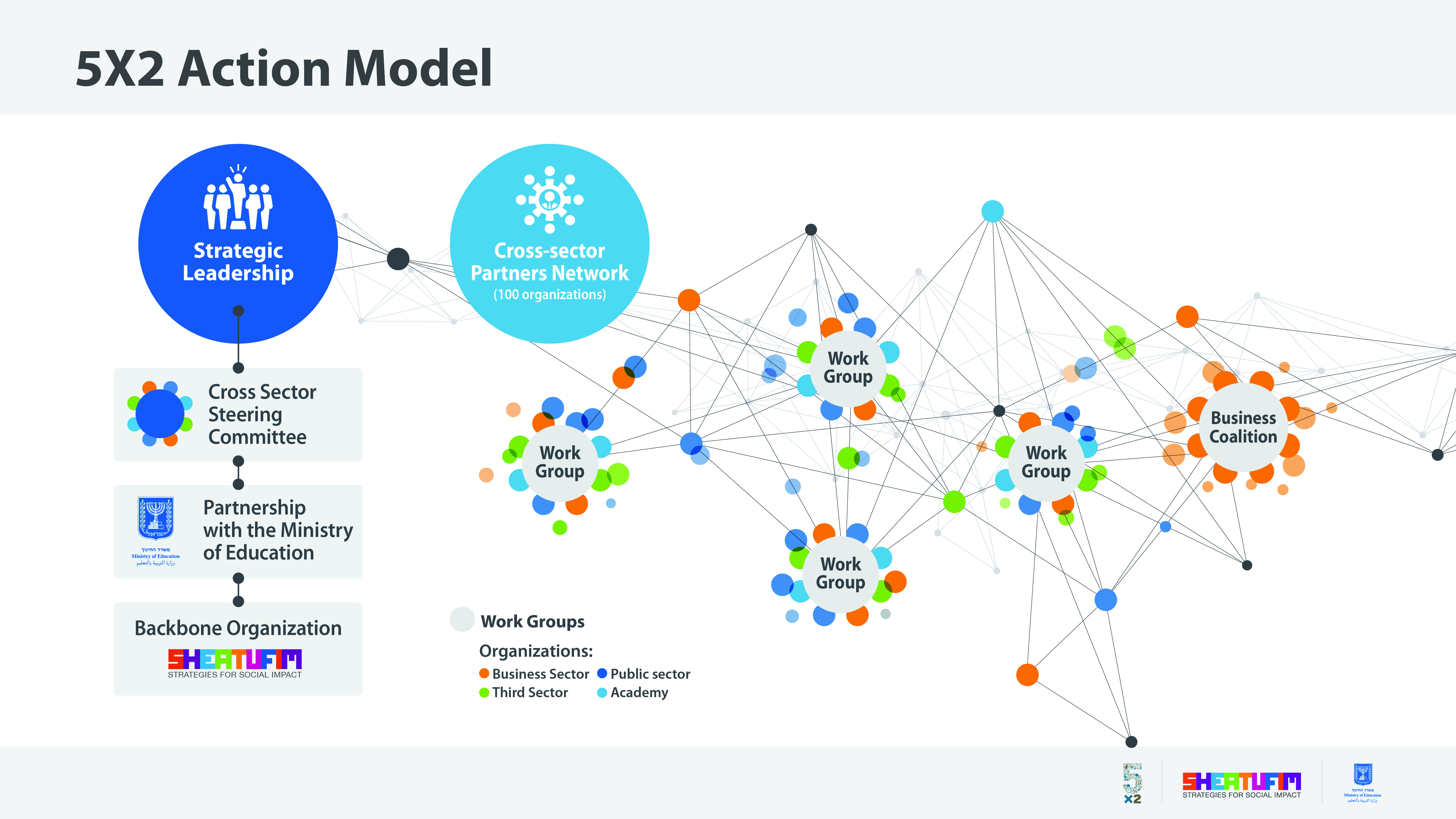
One example of this is that when the National Program was announced by the Ministry of Education in 2015, there was already a well-established infrastructure on the ground that was capable of applying and implementing the policy changes. While in other instances, a new educational policy may be declared while the grassroots population feels alienated and uninvolved, in this case the policy was only declared after the actual educational bodies were already on board with the policy and were acting in its spirit. The bidirectional movement created between grassroots work and infrastructure and the processes of policy change enabled the change to work powerfully and rapidly. This mutuality among all the players is the strongest manifestation of the nature of collaborative governance in the Initiative.

**As a general rule, in addition to the work of the steering committee, the Initiative’s network of partners operates through several cross-sector working mechanisms:**

1) **Work groups** promote key issues through processes of reflection and analysis, collecting information, and defining shared methods. The work groups are managed by the backbone organization and include content experts and relevant representatives from the range of organizations in the partners network. Over the years, work groups have been active on various issues: student motivation, retraining from hi-tech to teaching, science excellence in the periphery, and technological excellence. The outcomes of the groups’ work are diverse and are inculcated in cooperation with the Ministry of Education.

2) Every year, an **annual meeting of the partner network** is held, bringing together representatives from all the organizations that are members of the network. These meetings provide a platform for enhancing cooperation, learning, and the creation of common knowledge and language.

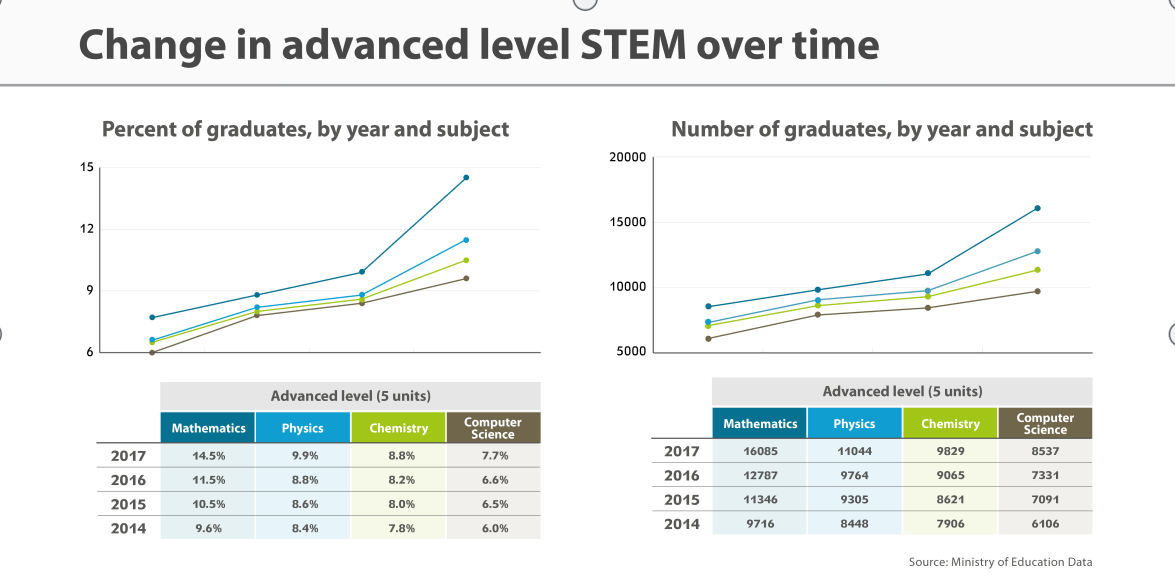
3) **Ongoing online communication** intended to strengthen the transparency and coordination between the different players.



**Stage 4: Results (2016-2017)**

The central objective of the 5x2 Initiative – to double the number of students taking the matriculation examination in mathematics at the level of 5 study units – was secured in just four years. From the year 2014, the downward trend seen in the preceding years was reversed: from a low point of 8,869 students taking the examination in 2012 to 16,085 in 2017. The expectation is that the figure will continue to rise through 2019. The reversal of the trend in mathematics also influenced the number of students taking 5 units in physics and chemistry. Significant progress was also seen in the objectives of recruiting new teachers and improving the quality of teaching in these subjects.

The reversal of the trend occurred in all streams of education in Israel, including in communities with a low socioeconomic profile. The initiatives to open classes, the allocation of significant resources, and the encouragement of school policy to promote excellence appear to have led to the change. However, it was also apparent from the figures that the most significant increase was concentrated in communities with a high socioeconomic profile, and that the gaps between the different sectors were not reduced.[[7]](#footnote-7)



**The Next Stage: Looking Forward (2017-2020)**

There was a sense of success and satisfaction with the joint work upon seeing the figures that showed that the Initiative’s goal of doubling the number of students would likely be met. At the same time, questions were raised concerning the Initiative’s next steps. In September 2016, the steering committee held a strategic thinking process at the end of which it was decided that, in order to ensure that the change in the trend would not be an isolated finding but would be based on the necessary infrastructures for sustainable change, it is important to continue the integrated actions by diverse players within the framework of the strategic partnership with the Ministry of Education. The same process defined two strategic focuses for the Initiative’s work over the period 2017-2020: Expanding the circle of excellence in the social and geographical periphery, and strengthening the knowledge, skills, and sense of capability among junior-high students.

As noted, the impressive increase in the number of students taking 5 units in mathematics originated mainly from the center of the country, from the Jewish sector, and from socio-economically strong communities. The focus on the periphery emphasized the key importance of action on the local level, and demanded deeper thought and attention to the roots of the gaps between the center and the periphery in the fields of science education. To this end, the Initiative, which in its first few years worked to initiate the process on the national level, was required to strengthen the communication and cooperation with the local regional authorities. Accordingly, the Ministry of Education decided to expand the national program, using a specific invitation to local authorities in the periphery.

The strategic planning process thus confirmed once again the value of cross-sector action in advancing common objectives. It also defined the relative advantages of the 5x2 Initiative: a broad perspective on the field and diverse target populations; management of a partners network open to any relevant organization interested in joining the common initiative; managing and building the partnership, relations of trust, and joint leadership mechanisms with the Ministry of Education; and a platform for initiating systemic initiatives that integrates in an effective and focused manner diverse third sector and business organizations. The process also highlighted the Initiative’s role in providing a long-term perspective that extends beyond the periods of office of governments and ministers, allowing continuity, the strengthening of infrastructures, and monitoring of the long-term securing of the objectives.

**Is the Initiative an Instance of Collaborative Governance?**

Collaborative governance has various layers: preliminary assumptions; the nature of the governance arrangements themselves; policy-setting and decision-making processes; and realization through the implementation of policies. The story of the 5x2 Initiative shows that layers of collaborative governance were manifested differently during the various stages of the joint initiative, as will be presented here.

**The Layer of Preliminary Assumptions**

The goal of the collaborative governance in the 5x2 Initiative was to advance a public goal of expanding the circle of science excellence in education; the goal was intended as a response to the downward trend in the number of students choosing these subjects, and also as a step toward narrowing the gaps between Israel’s center and the periphery, and between the Jewish and Arab sectors. The decision to create mechanisms of collaborative governance was based on the understanding that this is the only way to generate change, i.e. to secure results and create public value. The complexity of the problem, with its many different dimensions, demanded joint action by players from all three sectors. In addition, the cross-sector partners network created public value and manifested the democratic values of a public voice, through civil society organizations active in the field of education.

The Initiative set out with the preliminary assumption that the Ministry of Education is the body that should lead the partnership to promote systemic change by setting policy and defining priorities. In the first year, the action strategy of the cross-sector partnership, led by philanthropic, business, and third sector educational bodies, focused on creating dialogue, building trust, and recruiting the senior management of the Ministry of Education to lead the joint initiative. The cross-sector partnership was based on a worldview that emphasizes the state’s responsibility for public and educational matters; the shared and complementary methods were shaped accordingly.

**The Substantive Layer**

The 5x2 Initiative was launched as a cross-sector initiative by extra-governmental bodies from the philanthropic and business sectors. After the Ministry of Education joined the Initiative as a leading partner, and certainly following the launch of the National Plan in 2015, a collaborative governance arrangement was effectively consolidated. In this arrangement, the 5x2 Initiative served as a central force, introducing and implementing processes that directly influence the Ministry of Education’s actions. In the second and third stages of this joint initiative, collaborative governance arrangements were consolidated and shaped, while the initiative’s common objectives and policy processes were determined through consultation and cooperation through discussions by the cross-sector steering committee.

The **Ministry of Education’s** openness to the processand its recognition of the potential in the cross-sector initiative played a key role in facilitating the creation of common action mechanisms over time. Specifically, the Ministry of Education’s experience in the participatory processes led by the Cross-Sector Round Table led its senior management to recognize the value of building trust and common discourse with organizations from the third and business sectors. The 5x2 Initiative complemented these trends and exemplified the possibility of initiating and consolidating shared mechanisms around a diverse range of issues, in the belief that this would strengthen Israel’s education system and Israeli society as a whole.

The effectiveness of the joint work depends on there being clarity regarding each player’s unique role and contribution, in this case, the role of the business and third sectors in supporting and complementing the core initiatives led by the Ministry of Education. This clarity was created in the 5x2 Initiative through gradual processes and through building consensus among organizations from the various sectors: the coalition of businesses, meetings of the Initiative’s third sector organizations, and the discussions of the cross-sector steering committee.

Thus the **Ministry of Education** promoted the core track of the National Program through policy decisions and budgetary allocations for increasing teaching hours, opening new classes, expanding teacher certification, and promoting incentives in academic institutions and among regional authorities.

The **business sector organizations** gradually formulated the approach that, since the core educational issues are not their area of expertise, it is important that they focus their action in areas where they can add value: recruiting and mobilizing volunteers in a range of supportive activities; presenting students with a picture for their future; and reinforcing their sense of capability by presenting them with role models. The business sector also invested financial resources in the establishment of infrastructures in schools and in funding programs to reinforce mathematics and science studies.

The **third sector and philanthropic organizations**, with ties in the grassroots arena and academia as well as extensive experience in cooperative ventures, contributed their strengths by promoting complementary solutions in the field of pedagogic innovation, creating virtual platforms, and strengthening the bond and continuum between formal and informal education.

As a cross-sector initiative in collaborative governance, the 5x2 Initiative is based on the building of mutual trust between the different players. Due to the large number and diversity of participants, and the differing social beliefs underlying their activities, it was important to establish the understanding that there is no single solution to a problem, but rather that the solution requires the effective and coordinated combination of forces bringing multiple perspectives, different types of expertise, and diverse experience.[[8]](#footnote-8) Various work processes contributed to building trust: transparency and sharing of data; defining and dividing responsibilities among the different sectors; common discourse to understand systemic problems; and processes of forging consensus and joint decision making.

Another important factor is a systemic perspective relating to the broader context, to systemic structures, and to each player’s unique contribution over time.[[9]](#footnote-9) The function of the backbone organization is to ensure that the joint action continues to take place on the basis of a systemic perspective that combines diverse viewpoints, and that the activities by the partners network are not subsumed by the government’s operations, thereby losing their civil and voluntary value. The commitment to the third sector organizations’ independence is grounded in the understanding that the organizations play an important function in the outcomes of collaborative governance and in advancing systemic solutions. In other words, without the collaborative governance mechanisms built in as part of the common initiative, it would not have been possible to secure the public goal of expanding the circle of science excellence and to advance the common socioeconomic vision.

**The Layer of Policy Setting and Decision Making**

During the early stages of the policy-setting processes, when the Ministry of Education defined excellence in mathematics and science as a key priority, discussions were held and joint decisions made in the Initiative’s cross-sector steering committee based on the following principles: formal, collective (with diverse stakeholders), deliberative (participatory), and consensus-oriented. Once the National Program was launched, concrete decisions on the allocation of resources, setting criteria for the invitations, and other formal procedures were undertaken in consultation with the integrative mechanisms, but there was no joint decision making.

However, the informal mechanisms led by the backbone organization continued to operate throughout the collaborative work processes, forging agreements and consensus. The mechanism of the Initiative is not incorporated as a formal legal entity, and all the partnerships, including those with the Ministry of Education, are maintained through voluntary mechanisms of the public steering forum, the steering committee, the work groups, and the plenum of the partners network. The public steering forum of the National Program does not operate by virtue of law and is not defined in a formal association, but rather is based on an informal commitment to partnership, based on an understanding of the added value, relations of trust, and common commitment to securing the objectives. These informal mechanisms have operated over a period of five years with a growing commitment on the part of the different partners to the outcomes and to joint action.

Alongside the formal mechanisms, the third and business sector organizations continued to maintain independent activities in the field to promote the common goals. These activities are not necessarily supervised, monitored, or controlled in formal terms by the Ministry of Education. Alongside the National Program, led by the Ministry of Education, Sheatufim continues to serve as the backbone organization that convenes and leads the informal joint work processes and that promotes action, discourse, and joint learning by the broad cross-sector partners network.

**The Implementation Layer**

During the implementation and realization of the National Plan, the steering committee gradually became a consultative forum serving as a platform for reflection and for highlighting key issues and obstacles. The integrated mechanisms are not responsible for budgetary decisions and do not directly manage joint programs. This creates some challenges for the Initiative process as collaborative governance; it also raises the question of whether and how the governance arrangements might be strengthened in order to act effectively and manifest the different viewpoints during the implementation and realization stage as well.

**Conclusion**

The 5x2 Initiative is a cross-sector partnership created by a network of partners from the social, business, and philanthropic sectors that joined forces with Israel’s Ministry of Education. This article presented the Initiative as a specific instance of collaborative governance. The collective impact model adopted by the Initiative is based on principles of action drawn from the culture, political structures, and cross-sector relations of American society, which differ substantially from their Israeli counterparts. Those who conceived and developed the model do not conceptualize it as an initiative in collaborative governance. However, we suggest that, in effect, collaborative governance mechanisms were created in the implementation of the action model in Israel society, taking into account perceptions about the sovereignty and role of the state in processes of change and the cross-sector dialogue and trust that was created in the partners network and with the Ministry of Education. All these factors largely explain the success of the Initiative.

The relations of trust and the unique partnership developed between the senior management of the Ministry of Education and the representatives of organizations from the different sectors were key factors in promoting the National Plan and in securing the common objectives. The Initiative created a meaningful platform for open and participatory discussions that were conducted in a professional manner and based on knowledge and data. These discussions permitted different voices to be heard and allowed joint action to be advanced by diverse players. The constitution mechanisms were extremely effective during the planning and policy-setting stage, facilitating joint decision making. During implementation and inculcation, these mechanisms changed their function and became consultative bodies, while decision making was undertaken by the Ministry of Education. It now remains to be seen how the partners network and the cross-sector action will maintain the momentum and commitment of all the players and will continue to address the substantial challenges in the field. These challenges include the need to strengthen infrastructures and the long-term maintenance of the achievements gained in strengthening excellence in the periphery and among all groups in Israeli society.

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1. See, for example, [Strive Together](http://www.strivetogether.org/) in education; [Memphis Fast Forward](http://memphisfastforward.com/) and [Greater Cincinnati foundation](https://www.gcfdn.org) for strengthening and advancing the community; [The Global Alliance for Improved Nutrition](http://www.gainhealth.org/) (GAIN) and [Communities That Care Coalition](http://www.communitiesthatcarecoalition.org/) in public health (Hanleybrown, Kania, & Kramer, 2012). [↑](#footnote-ref-1)
2. In Israeli high schools, subjects are studied at varying levels of difficulty, represented by the number of “study units” that students take in their matriculation examination. The highest study level is known as 5 units. [↑](#footnote-ref-2)
3. See: Picture of mathematics studies in Israel: Trends and findings from the education system, [Report no. 1 (November 2016) and Report no. 2 (March 2017)](http://cms.education.gov.il/EducationCMS/Units/Rama/HaarachatProjectim/Math_report.htm), National Authority for Evaluation and Measurement in Education, Ministry of Education (in Hebrew). [↑](#footnote-ref-3)
4. For example: [The shortage of personnel in hi-tech: Recommendations of the interministerial team](http://www.pmo.gov.il/Lists/FAQkalkala/Attachments/21/tech.pdf), National Economic Council, 2012 (in Hebrew); see also: [Increasing the supply of trained personnel required for knowledge-intensive industry](http://economy.gov.il/Publications/PresSReleases/Documents/HiTechManpowerReport.pdf), Report of the Steering Committee in the Ministry of Economy, August 2014 (in Hebrew). [↑](#footnote-ref-4)
5. The Cross-Sector Round Table in the Ministry of Education was established in 2013 and functioned as a platform for cross-sector discourse, bringing together representatives from the public, business, and third sectors. The round-table addressed a wide range of issues, including: Regulating external programs in the education system; coordination between the ministry and civil society in routine times and during emergencies; encouraging an entrepreneurial culture in the education system; health promotion in the education system; and the transition of junior-high sections to self-management. Sheatufim serves as a body that assists in running the round table, parallel and separately to its work in the 5x2 Initiative. [↑](#footnote-ref-5)
6. See: Picture of mathematics studies in Israel: Trends and findings from the education system, [Report no. 1 (November 2016) and Report no. 2 (March 2017)](http://cms.education.gov.il/EducationCMS/Units/Rama/HaarachatProjectim/Math_report.htm), National Authority for Evaluation and Measurement in Education, Ministry of Education (in Hebrew). [↑](#footnote-ref-6)
7. [CBS Publication dated 30 Jan. 2018: Trends in mathematics and science in the senior-high section 2006-2016](http://www.cbs.gov.il/reader/newhodaot/hodaa_template.html?hodaa=201806027) (in Hebrew). **For statistics relating to changes in the other dimensions of science excellence in education, see** <http://www.trump.org.il/scoreboard>. [↑](#footnote-ref-7)
8. For further insights about the various components of the model, see: Rom, Yakoby-Horowiz, and Hurvitz, 2015B. [↑](#footnote-ref-8)
9. [↑](#footnote-ref-9)