

**A Tale of Two Planets?  
Policy-Making and Actual Classrooms:  
The Case of Teaching to Think in Civics Education**

Anat Zohar



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Anat Zohar is an Associate professor in the School of Education at the Hebrew University, Jerusalem, Israel, and a Paula and James Crown Member in the School of Social Science at the Institute for Advances Study, 2009-2010. She received her M.Sc. in Genetics in 1982 (with distinction) and a Ph.D in Science Education from the Hebrew University in 1991 (Summa Cum Laude). She is interested in questions pertaining to learning and instruction, the development of students' thinking, metacognition, teachers' professional development in the context of teaching thinking, gender and science learning, gender and education for the gifted and educational policy making in relation to learning and instruction. During the years 2006-2009 she was Director of Pedagogy in the Israeli Ministry of Education, a role that involves state-wide responsibility for curriculum, learning and instruction across all school subjects (k-12). In this position Zohar led the "Pedagogical Horizon" program designed to emphasize the teaching of higher order thinking in Israeli classrooms. She is the author of *Learning, Thinking, and Learning How to Think* (1996); *Teaching Higher Order Thinking in Science Classrooms: Students' Learning and Teachers' Professional Development* (2004); *Learning by Inquiry: the Ongoing Challenge* (2006); and *Metacognition in Science Education: Trends in Current Research* (in print). Zohar received fellowships and research grants from the Lady Davis Foundation, the Wolf Foundation, the James S. McDonnell Foundation, the Israeli Ministry of Education and the Israel Science Foundation (ISF). She is currently working on bridging the gap between educational policy making and changes in learning and instruction, and on how to upscale educational projects in the field of developing students' thinking with an eye to wide implementation.



# **A Tale of Two Planets? Policy-Making and Actual Classrooms: The Case of Teaching to Think in Civics Education**

## **Introduction**

The main issue I address in this paper—the gap between educational policy making and the actual processes of learning and instruction that take place in schools— is highlighted by Gabi Salomon’s critique of the most comprehensive report that was ever produced about the Israeli school system. The public nickname for this report which appeared in 2004 is the “Dovrat” report, after the chair of the committee—Shlomo Dovrat—who is a prominent Israeli businessman.

The report includes hundreds of pages of recommendations about issues pertaining to almost all aspects of education. But one area is missing: there are no recommendations about learning and instruction. Salomon, a professor of education who is the recipient of the distinguished Israel Prize, wrote that the report addresses important administrative, financial and managerial issues, but neglects pedagogical issues. This is a crucial omission, claims Salomon, because those who follow its recommendations will address only the surface of schooling without touching its essence (Salomon, 2005). “If my grandfather who was a school principal in Berlin in the earlier part of the twentieth century...tomorrow entered the room of a principal from Dovrat’s generation, he would be totally lost. But if he entered the classroom, he would feel entirely at home. He would immediately find the pedagogy, the atmosphere, the regulations and the activities as familiar as if he were in his own classroom in Berlin a hundred years ago” (Salomon, 2005).

Educational policies often don’t address learning and instruction, and even those that do rarely succeed in changing it. Throughout the twentieth century we have witnessed numerous educational policies resulting in many large-scale changes in schools. Whether or not they explicitly addressed learning and instruction, those processes remained surprisingly constant (Fullan, 2007; Elmore, 2004; Cuban, 1990). Is this important? My claim is that it is extremely important because learning and instruction are at the heart of education. Whatever happens in schools behind the closed door of the classroom, in the interactions that take place among students, teachers and learning materials in the process of constructing knowledge is the most fundamental and the most significant thing about schools. Yet the closer an attempted educational change gets to this core of the educational experience, the less likely it is to succeed on a large scale (Fullan, 2007; Elmore, 2004).

Looking at this issue from a different angle raises the challenge of up-scaling educational projects. Educators – academics and practitioners alike- know fairly well how to carry out projects addressing innovations in learning and instruction. For about ten years, I was the director of such a project – “Thinking in Science Classrooms”- whose goal was to emphasize thinking strategies in the Israeli junior high school science

curriculum (Zohar, 2004). This project is far from being unique because in recent years, hundreds of projects aiming at improving pedagogy have been designed and implemented all over the world, with considerable success. The problem is that although there is currently substantial knowledge about how to induce successful change in learning and instruction on a small scale (or on the level of “projects”) we don’t know how to upscale them, i.e., how to make them work across the system in a large number of schools.

Several recent efforts to improve education on a large scale by focusing on changes in learning and instruction are beginning to offer insights into how such endeavors may work, or fail to work (e.g., Levin and Fullan, 2008; Fullan, 2007; Payzant and Horan, 2007; Elmore, 2004; Cohen and Barnes, 1993). Nevertheless, the international community of educational scholars and practitioners needs to acquire more knowledge and experience in order to improve understanding of this vital field. The aim of this paper is to examine relationships between educational policy - making that centers on pedagogical changes in learning and instruction and various factors that may affect it on its way to the classroom. I will concentrate on a pedagogical change whose goal is currently embraced by numerous educators across the world: fostering thinking and understanding across the curriculum.

### **Brief Description of the “Pedagogical Horizon” (PH)**

The call for teaching in a way that would invoke thinking as a daily routine in schools is by now several decades old (e.g., Adey and Shayer, 1993; Bruer, 1993; Pauls, 1992; Perkins, 1992; Resnick, 1987). The vast literature in this field mentions three main reasons for supporting policies that aim at teaching students to think: (a.) according to current learning theories teaching for thinking and deep understanding is the way to achieve meaningful knowledge construction; (b.) the development of students’ thinking strategies is a necessary condition for preparing future citizens for full and responsible participation in a democratic society; (c.) the development of students’ thinking strategies is part of what is commonly called “twenty-first century skills”, i.e., it is crucial in preparing students for participating in the global work market and for being literate consumers of the vast amounts of information that characterize the “information age”. Like other countries, Israel has had its share of projects that see the implementation of inquiry and higher order thinking in schools as their main goal (e.g., Dori & Herscovitz, 1999; Dori et al., 2003; Schwarz, Neuman, Gil, & Ilya, 2003; Zohar, 2004). Although many of these projects were quite successful, however, they did not succeed in changing most teaching and learning in Israeli schools. Rather, such projects existed as isolated pockets or “islands” of exemplary teaching within a “sea” of much more traditional schooling that emphasized rote learning of facts and algorithmic problem solving. With an eye to changing this state of affairs, the Israeli Ministry of Education adopted a new national educational policy in 2007 (Zohar, 2008, Israel Ministry of Education website–

(Pedagogical Horizon, “Ofek pedagogy,” retrieved April 2010). The gist of the policy was a move from rote learning and routine problem solving towards instruction that emphasized thinking and deep understanding. A document explaining this policy (called “Pedagogical Horizons for Learning”) was first published in January 2007. The rationale for the new policy was explained by making reference to the desired characteristics of future school graduates, formulated in the following way:

“We live in an era characterized by short-lived generations of knowledge that succeed each other at a dizzying pace. In order to ensure that graduates of Israel’s education system are able to successfully meet the cultural, economic, scientific and technological challenges of the twenty-first century, we must change our conception of what such graduates should know. One of the main goals of the education system has been, and still is, for graduates to have extensive knowledge in a variety of academic disciplines. However, our future graduates will not be able to rely on a defined body of knowledge that they have acquired at school; rather they will need higher-order thinking abilities, the ability to make judgments, and the skills for creative and critical thinking, all of which will enable them to attain new knowledge throughout their lives.”

The emphasis of the Pedagogical Horizon policy was on pedagogy rather than on content: on “how to” rather than on “what to” teach. It is important to note that the emphasis on thinking and understanding does not replace the significance of knowledge acquisition that is still considered an important educational goal. The policy is also not opposed to rote learning. The assumption is that rote learning is important for achieving some educational goals, and should therefore take up some of the classroom time, but that if students spend most of their time in rote learning it becomes detrimental. The problem in most classrooms is not that there is rote learning per se, but that on the whole, the level of tasks that students are engaged with is not balanced, with rote learning being over emphasized and learning applying higher order thinking under emphasized. The goal was therefore to reach a more balanced approach than currently existed in most classrooms.

The policy adopted the infusion approach to teaching Higher Order Thinking (HOT), i.e., thinking is integrated into school curricula rather than taught as an independent subject. A typical lesson therefore would consist of content goals and thinking goals that are both addressed in an explicit way. The lesson is rich in cognitively challenging questions and tasks that make intense use of thinking strategies such as argumentation, problem solving, asking questions, making comparisons, decision making, controlling variables, drawing conclusions and identifying assumptions. The classroom learning environment fosters a discourse that is rich in the “language of thinking” (e.g.,

because, therefore, justification, conclusion, assumption, etc.). Finally, lessons also foster metacognitive thinking.

### **Educational Context**

In order to understand the significance of the processes described in this article some background information about the relevant educational context is required. The Israeli educational system is centralized. With approximately 1.9 million students (K-12th grade) and 4000 schools there is basically one curriculum prescribed by the Ministry of Education that covers a large percentage of what is taught in most schools. At the end of high school students take matriculation exams in seven mandatory core subjects: language (Hebrew/Arabic), English (as a second language), mathematics, history, bible, literature and civics. Additional subjects are mandatory in elementary and junior high schools (science, geography, a second foreign language, etc.). In addition, many other subjects are electives in high school (e.g., biology, physics, chemistry, communication, arts, computers).

For each subject there is a National Subject's Superintendent (NSS) who is responsible for policy-making and for the practical sides of teaching in this particular subject, including teachers' professional development and student assessment. NSSs work with a team of instructors who help to coordinate and lead activities in each subject. Instructors also provide teachers with pedagogical support by visiting classrooms and schools and by meeting small groups of teachers to discuss professional matters.

For three years my role in the Ministry of Education was Director of Pedagogy. This position has traditionally been reserved for an academic who is appointed by the Minister of Education. The appointment is therefore a temporary one, often ending when a new Minister is elected. The position entails responsibility for policy-making pertaining to learning and instruction throughout the system as well as responsibility for curricula and its implementation in all school subjects (K-12). From an administrative point of view the Director of Pedagogy is responsible for the NSS division as well as for several other divisions that have to do with pedagogical affairs. My academic expertise is learning and instruction, with a focus on the development of students' thinking across the curriculum, predominantly in science education.

### **From Policy-making to Implementation**

2007 was not the first time that teaching thinking was addressed in Israeli schools. In fact, there are many cases of exemplary teaching that were generated either through various small projects or through schools' independent initiatives. The novelty of the Pedagogical Horizons (PH) policy had two main aspects: (1) addressing thinking as a major and universal educational goal; and, (2) planning practical means for wide-scale implementation throughout the school system on a national scale.



The difficult question was how to achieve this goal. Following deliberation and consultation of the literature (Tamir, 2006), it became clear that large scale implementation of the PH policy needed to center on three sides of a triangle: (1) introducing changes to curricula standards and learning materials; (2) introducing changes to professional development; and, (3) introducing changes to assessment.

The literature about the conditions for facilitating pedagogical change is unanimous about the importance of professional development centering on the improvement of students' learning. The implementation process thus consisted of intensive professional development on all levels: superintendents (NSS's), instructors, teachers and pre-service education (teachers' colleges).

### **Assessment**

The Israeli matriculation exams are extremely conservative and have not changed for many years. They assess mainly knowledge of facts and the ability to solve routine problems and they require very little higher order thinking. Since "assessment drives instruction" and since teachers "teach for the test" the current matriculation exams are a barrier to any pedagogical reform. Implementation of the "Pedagogical Horizon" policy makes it necessary to introduce radical changes to the matriculation exams taken at the end of high school and to the "Meitzav" exams that take place in fourth and eighth grade.

The changes in the matriculation exams took place in three different venues:

1. Slowly increasing the percentage of HOT items in written tests.
2. Gradually adding small inquiry projects as part of the final matriculation score.
3. Increasing the component of school-based, portfolio assessment as part of the final matriculation score (science, literature and English).

During the years 2006-2009, significant steps were taken to begin to make changes in all three areas. These changes actually reached the classroom level and had begun to affect learning and instruction in a way that influenced teachers' interactions with their students around content. Such a systemic plan for implementing a pedagogical change can therefore potentially affect learning and instruction. Nevertheless, although such change at the classroom level is potentially possible following a clear policy and systematic implementation plan, it is very sensitive and can be easily disrupted.

In what follows I will analyze an example showing how what happens in the classroom on the level of learning and instruction is affected by policy making in ways that may be intentional or unintentional, documenting how difficult it is to actually change learning and instruction in a sustainable way. For the purposes of this essay I chose the example of teaching thinking in civics education because in this particular subject the policy of Pedagogical Horizons converged with additional, related policies to create intricate effects on learning and instruction. The analysis of the ways in which

teaching thinking developed in civics education over the years is portrayed in what follows.

### **The Kremnitzer Committee and its Effects on Civics Education**

Until 1995 the civics curriculum in Israel was mostly fact-based. In 1995, an important policy-making event took place in the context of civics education. The Minister of Education, a law professor from the left wing liberal Meretz party, appointed a public committee (the Kremnitzer Committee) to suggest a new policy for the teaching of civics. In those years the Ministry of Education was characterized by liberal views that were expressed by its pedagogical policy on many issues (e.g., Israel Ministry of Education, 1996a). The murder of Prime Minister Rabin in November 1995 had put civics education at the center of public discourse because of a common feeling that Israeli society needed to enhance education for democracy and tolerance.

The Kremnitzer Committee wrote a detailed report consisting of multiple recommendations in several areas (Israel Ministry of Education, 1996b). The report defined the goals of civics education as multi-dimensional, emphasizing not only knowledge but also attitudes and values, including an emphasis on education for active and responsible citizenship: “fostering knowledge, understanding and analytic capabilities, assessment and decision-making abilities in social and political issues, internalizing the values of the state, creating a commitment to democracy and willing to defend it, ability and motivation to be an active, involved and responsible citizen” (Israel Ministry of Education, 1996b, section 4, p. 10). The report emphasized the need for informal school activities in addition to formal civics lessons. Due to space restrictions I can only treat the recommendations concerning the formal civics curriculum. These included the substantive material of the curriculum, more hours added to the teaching of civics (an increase in the number of weekly hours from three to six), and a requirement that instruction be organized around a list of thinking goals. Following are several citations from the report:

- “It is important for students to be able to analyze social and political issues in all their complexity.... This involves encouraging rational and moral thinking ...”
- The capacity to analyze issues addressing tensions between different human rights or between a right and some kind of interest... ”Ability to adopt a position on an issue in a responsible and justified way...” this should be the same size type as all the others
- “Ability to provide reasoned, justifiable criticism”
- “Ability to debate issues in a civilized manner”
- “Ability to enter dialogue with others (including those with different views), and to seek common ground with others”

- “Ability to understand, value and respect other cultures.”  
(Israel Ministry of Education, 1996b)

The Ministry of Education adopted the Kremnitzer Committee report and took several actions to implement its recommendations. One of these was the appointment of a committee whose role was to write a detailed new curriculum based on the report. The new civics curriculum was finally published in 2002, six years after the report had been completed. The number of years it took to complete the new curriculum is a significant factor in understanding the difficulties involved in the implementation of a new pedagogical policy. Following the report’s recommendations, the curriculum indeed elaborated issues pertaining to the teaching of thinking strategies. For example, according to the curriculum document, “students should be able to:

- “...Apply the principles and concepts they had learned for an examination and an evaluation of the political and social reality.
  - ...Understand and analyze graphs tables etc., present findings and draw conclusions from data
  - ...Process information, categorize, compare, analyze and find connections.
  - ...Distinguish between facts and hypotheses and between facts and positions.
  - ...Formulate justified positions based on information.
  - ...Formulate supported and justified criticism.”
- (Israel Ministry of Education, 2002, pages 10-11)

Although civics education between the years 1995-2006 was strongly affected by the Kremnitzer report and by the new curriculum, the implementation of the policy endorsed by the report was by no means smooth, and only some of its recommendations actually reached the classrooms. To understand this process, let us follow some of the relevant events that took place during these years.

The policy-making Kremnitzer Committee met between 1995 and 1996. The earth-shaking political event of Rabin’s assassination took place while the committee was working, strengthening the significance of its recommendations and the public expectation for improvement of civics education. In this context, the committee’s recommendation to double the number of weekly hours for high school civics education from three to six seemed reasonable. However, by the time the new curriculum was published in 2002, a Likud minister of education was in office. The ministry now had new policies and new priorities. Concerning pedagogy across the curriculum (not specifically civics) it embraced a “back to basics” approach. In this regime, the new curriculum was implemented, but no hours were added. Also, pedagogical support for the implementation of the new curriculum was limited. A pilot for implementing the performance task was limited to sixteen schools.

### Pedagogical Difficulties

These circumstances created major pedagogical difficulties. One crucial issue was a very “crowded” curriculum. Since the recommended addition of hours was never realized, the number of chapters of the new curriculum that schools were required to teach was reduced by approximately 50%. This meant that there was insufficient time for many of the concepts in the civics curriculum which were abstract, complex and hard to understand. The original curriculum was (wisely) constructed in a spiral way: many concepts were supposed to be revisited several times in the course of the six weekly hours of study for which the curriculum was intended. The reduction of the number of chapters broke down the spiral structure of the curriculum. Consequently, it was difficult for students to digest the complex concepts and there was not really enough time to teach them in a meaningful way, as well as to cover all the content that was required. In addition, limited resources were devoted to professional development, mostly for developing teachers’ content knowledge. Only few of these resources addressed the curriculum’s thinking goals, and even those usually did not address ways for explicitly teaching higher order thinking in the classroom in a systematic way. The pressure on teachers to cover a crowded curriculum made them feel that they couldn’t afford the time required to engage students in class discussions and deep thinking. Together with teachers’ lack of training and proficiency in teaching thinking, this state of affairs meant that only a few of the thinking goals that were set out in the Kremnitzer report actually reached the classroom.

Despite this situation, thinking objectives did make their way into the matriculation exam which consisted of a relatively high proportion of thinking items. The fact that the exam required thinking of a kind that was not addressed properly in the classrooms, together with the large amount of required content and complex concepts that students did not have enough time to digest, caused the exam to be very difficult. As a result, for several years the civics matriculation exam had the lowest mean score and highest rate of failure among all mandatory matriculation exams. Students began to think of civics as a “difficult” subject and became afraid of it. This is clearly not a recommended formula for increasing students’ motivation to engage with this subject nor for civics to become a popular topic.

In sum, this account of revising civics education consisted of the following stages: (1) a policy decision that led to an appointment of a public committee; (2) the political event of Rabin’s assassination that brought the committee’s recommendations more public attention and support; (3) adoption of the committee’s recommendation by the government, including those recommendations addressing learning and instruction; (4) initiating a process of writing a new curriculum based on the committee’s report, a process that dragged on for almost six years; (5) meanwhile, additional changes of governments resulted in yet another set of new policies and change of priorities. The 2002 civics curriculum was endorsed and partially implemented, but the additional

recommended hours were not approved. This resulted in severe consequences for learning and instruction in general and for the “thinking” goals addressed by the report and by the curriculum in particular.

A large gap existed, then, between the intended and enacted curriculum, and little instruction of thinking actually took place in classrooms. Civics was conceived as an extremely “difficult” subject which in turn produced low students’ motivation. This state of affairs demonstrates significant gaps between the educational policy that addressed learning and instruction in an explicit way and the actual educational practice that reached the classrooms.

### **New Policies and Their Impact**

Then, in 2006, new elections once again brought a new government. Consequently, two new relevant policy decisions were made: the first pertained to strengthening civics as a discipline and the second to teaching thinking across the curriculum (i.e., the Pedagogical Horizons policy described earlier).

The new Labor Party Minister of Education, a former university professor of philosophy who specialized in political theory and philosophy of education, and who had also served as the head of the Israeli civil rights movement, had a deep personal commitment to education for democracy and civil rights and thus made a decision to strengthen the school discipline of civics. So the recommendation made ten years earlier, to double the number of weekly hours for civics education, was not only re-approved but also financed. In addition, the weight of the matriculation exam in civics was also increased (from a “one unit exam” to a “two unit exam”), and funds for teachers’ professional development and for an agreement with the teachers’ union concerning compensation for the civics performance assessment task were secured (see below).

The second policy decision—the adoption of the Pedagogical Horizon across the curriculum—was allegedly unconnected to the first decision about strengthening civics, but stemmed from the same liberal world view that values the development of students’ critical thinking and other intellectual capabilities rather than a “back to basics” approach. Implementation of pedagogies geared towards integrating thinking strategies into the teaching of content was supported in approximately twenty subjects, but in civics this process enjoyed an especially strong momentum because it joined forces with the events that took place following the decision to strengthen the subject. The implementation of the Pedagogical Horizon could be executed in civics in a particularly comprehensive way due to the extra funding and large scale professional development processes that followed the minister’s decision. In addition, the depth of the implementation of the Pedagogical Horizon in civics was facilitated by the events that had taken place during the past dozen years. The fact that detailed recommendations about teaching thinking were explicit components of the two civics policy documents (the Kremnitzer report and the curriculum document), as well the fact that modest beginnings of implementation of these recommendations had begun, meant that the

ideas about teaching thinking in civics were not new. Some seeds of these ideas had been planted and they contributed to the ability to make good progress with the implementation of the Pedagogical Horizon in civics education.

The following pedagogical actions took place in civics education in order to enhance the frequency and quality of thinking activities in learning and instruction:

1. Reducing the scope of the curriculum: In order for teachers to be able to devote time for extensive thinking activities in the classroom, there was a need to reduce the substantive (?) scope of the curriculum. Although the number of hours was multiplied (from three to six weekly hours), the extent of the original curriculum was reduced by 20%.
2. Developing a leadership team: The civics NSS participated in a long-term (three years) course that focused on the development of children's thinking. Six leading instructors participated in an intensive (one year long) professional development course that was designed for leading people from several departments. The NSS and these six instructors later led the professional development of additional twenty-two civics instructors (with assistance from external experts).
3. Teachers' professional development: The instructors' course served as a model for similar teachers' courses that were led by the instructors all over the country. Consequently, a total of 1200 teachers participated in thirty-four different professional development courses of twenty-eight academic hours each (including one on-line course of fifty-six hours). Teachers' learning included subject-matter knowledge concerning selected civic topics as well as pedagogical knowledge about how to teach selected thinking strategies and how to coach students while they engage in the performance assessment inquiry task (see below). The instructors also visited schools and supported teachers in their work. In subsequent years the same infrastructure of instructors would continue to support these teachers as well as run courses for a new cohort of teachers. In this way a widening "implementation fan" (Zohar, submitted) spread from the NSS to the leading instructors, from them to all additional instructors, and then to teachers and students.
4. Constructing a website: A website was developed, consisting of a section for civics instructors and a section for civics teachers. All the resources (the course's curriculum, resources, lesson plans and PowerPoint presentations) that were developed for the professional development courses were loaded onto the website. The website was also used for supporting teachers and students.
5. Designing model learning activities: The NSS, the leading instructors and additional experts developed a set of learning activities and lesson plans that

modeled how to integrate specific thinking strategies with specific topics in the civics curriculum. Working as a team, they collaboratively negotiated the form and content of materials for civics education. The first goal of these materials was to serve as learning materials for the instructors' and teachers' courses. Further goals were to help teachers implement these lessons in their classrooms; and, learn how to develop similar learning activities and lesson plans for additional topics.

6. Changes in the written matriculation exams: The NSS and the leading instructors analyzed matriculation exams of previous years to determine the cognitive levels of HOT questions. Following the findings from that analysis, gradual changes were made in the formulation of questions, in the cognitive level of the questions, and in the rubrics designed for scoring students' replies.
7. Implementing a performance assessment inquiry task: One of the most significant changes, however, was the implementation of the "performance task"—an inquiry project addressing a practical problem that students carry out in small groups. The problem addressed a civic problem that was anchored in real life (taken from either the school's local community, or from a wider sphere such as district, town or state) but that can be connected to some of the formal concepts from the civic curriculum. One of the options was for students to write about their own experiences in doing volunteer community work, linking their practical experiences with the curriculum. The score for this task replaced 20% of the matriculation final exam score. This task was recommended by the Kremnitzer report and the curriculum document, but for more than ten years (until 2008) its scope had been limited to sixteen schools which participated in a pilot study of this initiative. The implementation of a performance task on a national level is not a trivial thing because it requires attention to the design of supporting material for teachers, rubrics for assessment, teachers' professional development and ways to support teachers as they begin to work with students on their projects. A detailed description of this intricate process is beyond the scope of the present essay, and deserves a separate study.

All these pedagogical actions were necessary to induce changes in learning that would actually affect teachers and students. They were not, however, sufficient. Most of my time, as well as most of the time of the leading team, could not be devoted to professional pedagogical activities because of numerous issues pertaining to administration and bureaucracy, each of which was a potential barrier to implementation.. Let us look at three such examples. First, in order to construct a leadership team that would be capable of leading the complex pedagogical process described earlier, it was necessary to replace one of the key people in the team whose job

had been terminated. Although she was still on probation and did not have tenure in her position, she took the ministry to court. During the first year of the implementation, preparing the case for court was the activity that took more of my time than all the other activities I did in civics combined. Second, during the two subsequent years, large chunks of my time were devoted to dealing with the requirement of the teachers' union to get additional pay for the time teachers would spend supporting students in the performance assessment project. This process required numerous meetings with the head of the teachers' union and with officials in the ministry. Third, a more mundane activity was the creation of a new form that was needed to report the grades of the performance assessment task to the department of matriculation exams. The process of designing and approving this form required an unbelievable number of meetings and other activities. As trivial as some of these activities may seem, it is important to take into account that they are crucial links in the ability to execute an educational policy in a way that will reach the classroom.

In 2009, a new government was once again elected, and as always, new policies were put forth. At the time of writing this paper it is too early to discern what will be the fate of the processes described in this paper. On the one hand, the new leadership of the Ministry of Education embraced the pedagogical hierarchy and is continuing to implement and fund it. They are also continuing the more specific implementation processes pertaining to civics education. On the other hand, the complex implementation process does not enjoy the strong support it enjoyed in the previous administration. Moreover, the new leadership of the ministry is embracing a policy aimed at raising test scores on national and international exams, as well as the implementation of a high stakes accountability system for teachers and schools. In the absence of leadership that supports the complex and sensitive implementation processes described earlier, it is difficult to predict what will actually take place in civics classrooms in terms of teaching thinking in the next several years.

### **Summary and Conclusions**

Rather than the consequence of a single cause, what actually takes place in classrooms is influenced by an intricate web of variables such as students' socio-economic background, emotional experiences and prior knowledge; teachers' knowledge and beliefs about learning and instruction, their knowledge of subject-matter, the type of professional development they receive, their salaries; the school's principal, administration and budget; the community within which the school operates; social and cultural issues, and more. The fact that learning and instruction is influenced by so many variables that often change and always interact with each other in intricate ways makes it difficult to implement a deep and long-lasting change. Policy-making about pedagogy should be viewed in this context. Rather than a model that thinks about a simple causal chain from policy decision to the classroom experience, a model based on an analogy to certain



features of ecological systems seems more appropriate. Some aspects of new educational policies about learning and instruction may sometimes be viewed as analogous to genetic mutations in the sense that they introduce a new source of variation into the system. However, other aspects of new educational policies may be viewed as creating selection pressures that push the system to behave in a certain way (that may be intended or unintended).

An intricate web of pre-existing selection pressures—many of which have nothing to do with the specific policy—also contributes to determining whether the new policy will proliferate or not, and if so, to what extent. Introducing a change in one element of the system might induce changes (that can be quite unexpected) in other elements of the system. The final form of the system will depend on the balance among innumerable factors and forces. This paper illustrates and documents several pathways that took place in Israeli schools on the way from policy-making in the field of learning and instruction to what actually goes on in classrooms in terms of teaching thinking. An ecological model can help make sense of these pathways.

The pedagogical horizon policy centered on changes in learning and instruction. A detailed plan for implementation was devised and processes for its implementation had begun to take place. The model of implementation consisted of introducing simultaneous small and gradual changes in three domains: a. curricula, standards and learning materials; b. extensive professional development; and c. assessment. This implementation model aspired to align the assessment with learning materials and teachers' professional development to create a well coordinated and consistent change process. The general description provided earlier of the implementation of the pedagogical horizon and of the processes that actually took place in civics education between 2006-2009 gives a taste of the complex and sophisticated pedagogical work that needs to be done in order to facilitate a wide-scale implementation process in the field of teaching and learning, as well as of the necessary administrative and bureaucratic steps involved in this sort of implementation process. As a result of these processes considerable change had begun to take place in classrooms. Yet, in order to be sustainable, these efforts need to be stable over an extended period. What will actually happen to learning and instruction in the context of teaching thinking in the next several years is still an open question.

Examining the case of civics education over the last fifteen years sheds light on additional pathways. Formulating an educational policy aimed at fostering students' thinking without accompanying it with extensive implementation centering on the new pedagogy did generate several new activities (e.g., a pilot of performance task in sixteen schools, some examples of learning activities, some professional development and changes in the matriculation exam) but did not really create substantial changes in the way teaching and learning went on in most classrooms. In some cases, the stream of events and the selection forces they created generated unintended negative consequences such as the distortion of the spiral structure of the new curriculum that then created a

feeling of tremendous pressure to “cover the curriculum” and the high difficulty level of the civics matriculation exam that led to alienation and low motivation.

Issues pertaining to learning and instruction are often “invisible”, and are not taken into account in the process of educational policy-making and in the planning of the actual implementation processes for the schools. If we want to make progress in the area of large-scale changes in learning and instruction, it is crucial to look for ways to make pedagogical issues more visible and more influential in processes of policy making. We need to keep them on the table, and give them a higher status so that when additional policies are adopted with an eye to other legitimate goals, the new policies won’t end up being counter-productive or even harmful in terms of learning and instruction. Policy making in this field must be accompanied by detailed implementation plans that address the inner-workings of student-teacher interactions, preferably by involving experts in the field of learning and instruction. We also need to find ways to create feedback loops from classrooms into subsequent policy-making.

Two additional practical recommendations are suggested by my analysis. The ecological model presents the possibility of creating “selection pressures” that would support desired pedagogical policies. For instance, changing the matriculation exam to include a performance assessment task and frequent HOT items in written exams creates pressure that encourages teachers to engage their students in thinking activities. At the same time, it discourages teaching habits focusing exclusively on lower-cognitive skills. The second point is somewhat ironic because it tries to harness the usually negative, rigid side of bureaucracy in favor of a desired pedagogical change. Since bureaucracy is so rigid, once you succeed in introducing a change into the system, it will not be easy to eradicate it. In this spirit, once we succeeded in changing the written matriculation exam, in introducing a performance assessment task, in creating a new form, or in signing an agreement with the teachers’ organization, it would not be easy to reverse these achievements. Therefore, my recommendation is to identify bureaucratic issues that will support a desired pedagogical policy and to invest in trying to adapt them in a way that may support the pedagogical policy over an extended period.

This paper has documented the considerable gaps that need to be bridged between educational policies centering on learning and instruction and what actually goes on in classrooms. The experiences from the implementation of the pedagogical horizon bear both good and bad news. On the one hand, if you come with a clear head, a clear plan and determination, there is much you can do to make progress. On the other hand, the road is extremely bumpy with numerous challenges that you need to deal with on at least three different levels: policy, administration, and pedagogy. Unfortunately, attempts to actually deal with all three levels at once are uncommon.

One of the things we need to do in order to be able to increase the visibility of processes pertaining to wide scale implementation of learning and instruction is to improve our understanding of the characteristics of these processes. That has been my goal at IAS this year.

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