

Evaluation of the Creative Thinking Program in

Ultra-Orthodox Schools in Bnei Brak and Elad

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Introduction: The Creative Thinking Program

The Creative Thinking program is based on the work of the late Professor Gideon Carmi of Hebrew University and is operated by the Karev Program for Intervention in Education. The program aims to expose preschoolers and elementary-school children to basic science concepts and principles (for example, center of gravity, equilibrium, and energy) in an experiential manner (through the construction of a science toy) and to develop their ability to think, as well as their curiosity and creativity.

During the period 2012-2015, a pilot version of the program for the ultra-orthodox sector was implemented in 25 classes of children aged 3 to 6 in the city of Holon. The pilot project was funded by the Van Leer Foundation of Holland. At present, the program is implemented in ultra-orthodox schools in Bnei Brak and Elad for children ages 4-6.

The program involves three groups: children, parents and educators.

Children

The facilitators of the Creative Thinking program work in a dynamic and original manner to achieve the program's goals, piquing the children's interest in phenomena they encounter in daily life, as well as their ability to think and act creatively. The facilitators meet with each class once every two weeks and, each time, they bring with them a new science toy, which they use to teach the children about a certain scientific law or principle. The facilitators begin each session with an interesting story related to that session's toy and then conduct a discussion with the children that allows the children to "play" with the new concept/principle in an experiential manner. In addition, the facilitator and the children together construct a variety of science toys out of simple, readily available materials (for example, a noisemaker through which the students learn about sound waves and resonance, and a machine that demonstrates how different types of energy can be used). Through the use of these toys, the children are able to understand laws of nature such as gravity, proportion, energy, and mass. The children take the toys home with them along with explanatory handouts for their parents and pictures from the classroom activity.

Parents

At the end of each activity, the parents receive an explanatory handout regarding the scientific principle that was taught. In addition, some parents participated in a creative workshop together with

their children (who did not take part in the program at school¹). The exposure to materials and activities can encourage parents to continue to work with the program content during leisure time with their children.

Educational Staff

The teachers participated in a course regarding science concepts and principles at the theoretical and practical level, so they would be able to continue to work with those concepts between the sessions with the facilitator and incorporate them into their teaching.

¹ The school principals did not agree to our approaching parents to establish a workshop involving parents and children. However, in light of the importance of the issue for the Van Leer Foundation, the individuals running the program established workshops for parents and children who did not participate in the program at school.

Goals and Evaluation Questions

The evaluation of the Creative Thinking program is a formative and summative evaluation designed to evaluate the actual implementation of the program and examine how well it met its objectives. The study findings may help the Foundation staff and those at the forefront of the program to maintain its strengths, assess areas for improvement, and arrive at conclusions regarding the continued operation of the program.

Based on these goals, the following research questions were formulated:

1. How has the program been implemented and what difficulties and challenges have been faced in its operation?
2. What are the attitudes toward the program among the different participants (principals, teachers, and parents)?
3. How has the program influenced and benefited the participants (children, teachers, and parents)?

Research Method: Study Population and Evaluation Tools

During the 2015-2016 school year, qualitative evaluation methods were used². The qualitative data were collected from two localities (Bnei Brak and Elad) using semi-structured interviews with individuals who played different roles in the program and mothers who participated in focus groups.

Research Population

The different participants interviewed in each city/town are presented in Table 1.

Table 1: Study Participants by Locality

	Bnei Brak	Elad
Program director	1	
Program facilitator	1	
Principals	1	2
Supervisor	2	
Teachers	4	4
Focus groups of mothers	2	1

Research Tools

Interview with the director of the program in both localities (Bnei Brak and Elad)

A semi-structured interview that focused on the implementation of the program was held with the director of the program. Among other things, the director of the program was asked about how the program was implemented, difficulties and challenges, successes and accomplishments, and future directions for the program.

Interview with a program facilitator in both localities

The program facilitator was interviewed in a semi-structured interview that focused on the operation of the program in the schools. Among other things, the facilitator was asked about the successes and accomplishments of the program and difficulties and challenges that had been faced.

² In the original research plan, it was proposed that questionnaires be distributed to the parents. However, due to cultural sensitivities, that was not possible.

Interviews with school principals/supervisors

The principals/supervisors of the schools were interviewed in semi-structured interviews. These interviews focused on topics related to the implementation of the program at the organizational and pedagogic levels.

Interviews with teachers

Teachers were interviewed in semi-structured interviews that focused on how the program benefited them and the children.

Interviews with mothers in focus groups

In these interviews, the mothers were asked about the workshops with the children: what had motivated them to participate in the workshops, the learning experience, and how the workshops had influenced and benefited them, their children, and their immediate surroundings.

Procedure

During March-August 2016, face-to-face interviews were conducted with teachers, school principals and supervisors, mothers from the focus groups, and the director of the program. Telephone interviews were conducted with the program facilitator and other individuals involved in the program. Transcripts of these interviews were analyzed via content analysis.

Main Findings

The findings of research conducted this year are based on interviews conducted with individuals who play different roles in the program and on mothers who participated in focus groups. These findings relate to two localities (Bnei Brak and Elad) together. Differences between the findings from the two localities are noted.

Implementation of the Creative Thinking Program in Bnei Brak and Elad

This year, four ultra-orthodox schools in Bnei Brak and four ultra-orthodox schools in Elad³ took part in the program. Within the framework of the program, the children in these schools participated in activities, training was provided for the teachers (only in Bnei Brak), and joint workshops were held for mothers and their children (who did not participate in the program in school).

Activities in the schools

The activity sessions in the schools in Bnei Brak and Elad occurred once every two weeks. Each session lasted for 45 minutes and was led by an experienced Yiddish-speaking, ultra-orthodox facilitator from Achiya. The sessions addressed different topics in science, for example, mass and weight, center of gravity, and energy.

The different interviews revealed that the activities clearly emphasized the **development of the children's thinking**:

"We defined a goal, after we adapted the program for the ultra-orthodox population, we defined the goal of developing the children's thinking, in contrast to places where the program aims to teach physics ... to do that, you take the toy and use it to highlight a question, and then you conduct a discussion with the children, you let the discussion flow and ... they suggest hypotheses and we analyze them – this could be, that couldn't be, 'What do you all say?', 'How does it look to you?' ... that's how the class is run ... We take the knowledge that they already possess and use it to try and make new connections and that's what it means to develop thinking. We reinforce the knowledge that they already have and add additional knowledge." (Program facilitator)

"He [the facilitator] does a nice job of stimulating them – he starts at a basic level and then goes deeper ... and the kids are with him the whole time, trying to think more deeply." (A teacher in a school in Elad)

³ In Elad, the program began in the middle of the school year.

Similarly, the teachers reported in the interviews that the content of the program was **age-appropriate** and that sometimes **connections were drawn between the program content and the regular school curriculum**:

“It was just Lag B’Omer, so they made bows and arrows, and he [the facilitator] connected that ... He takes things that I would be teaching anyway and ties them in, if it’s before Passover, before Purim ... He generally ties it in to the holidays.” (A teacher in Bnei Brak)

Teacher training

Over the course of the year, a four-session training course was held for teachers teaching at ultra-orthodox schools in Bnei Brak. This training included theoretical and practical issues and was intended **to assist the teachers in their teaching and in integrating the topics into the regular classroom activities**:

“In terms of the teachers, the idea is to present the understanding that underlies the Creative Thinking program as a method of teaching, so that they can think about how to implement that approach in all of their teaching.” (Program director)

Mother-and-child workshops

During the second half of the school year, an eight-session workshop was held for mothers and their children, ages 3-10. The workshop was held in Bnei Brak and in Elad. Topics covered in the workshop were similar to those taught in the schools. The workshop aimed to expose the mothers to the activities and content so they **would be able to continue to work with these things in their leisure time with their children**. As mentioned above, the children who participated in these workshops did not participate in the in-school program and recruitment for the workshop was by word of mouth.

Reasons Why Schools Participated in the Program

The interviews with school principals revealed two main motives for participating in the program — **enrichment in an additional area of knowledge** (science) **and developing the children’s thought processes for, among other things, their future study of the Talmud**:

“I’ve been very excited about the program, the idea of introducing concepts to children, broadening their horizons, so they’ll know ...I was very much in favor of introducing this information ... It’s something that can be very useful on a daily basis.” (Principal of a school in Bnei Brak)

“When the children start to learn Mishna and Gemara, which require thought, this will put them ahead of the game.” (Principal in Elad)

An interview with a supervisor revealed another motivation — **broadening and deepening the knowledge of the teachers with regard to the development of young children:**

“One of the important things that I personally see as very critical ... that the teachers should understand that the pre-school age is not the standard age that they are familiar with from the past, ... that there are many areas of development that need to be emphasized and so anything that enriches the teachers’ knowledge and gives them a different perspective, a deeper perspective on this age, that’s something that we want the teacher to have.” (Supervisor of a school in Bnei Brak)

Satisfaction with the Program

The interviews with the different participants revealed that, in general, feelings toward the program are positive and there is a high level of satisfaction with the activities in the schools, especially with regard to their **benefits for the children** (described in detail below). The teachers expressed a high level of satisfaction from **how the facilitator interacted with others and from his professionalism:**

“He takes a concept that’s a little hard to understand and demonstrates it in a way that every child, even children with learning difficulties, can understand ... He has a special talent, that I think is quite rare, in that he gets down to the children’s level.” (Teacher in a school in Elad)

The teachers also expressed a high level of satisfaction with the **topics and content** taught as part of the program.

However, in our interview with the program facilitator, he noted that some of the teachers (particularly in Bnei Brak) did not share those feelings:

“There are the 20% who are ‘cold’ to the program. They don’t show any interest in the program... they say it’s just another program and ‘we know all about those programs’...” (Program facilitator)

The mothers in the focus groups also expressed a high level of satisfaction with the workshop activities and reported that they regularly attended those activities, despite the effort required (for some of them):

“It’s not easy to go out after we get home from work at 16:00, to go out again and come back at 19:00 ... It takes effort, but for a short period of time, it’s worth it.” (Mother who participated in the workshop in Bnei Brak)

“I see that they [the children] are so happy, how much fun it is for them, so I make the effort to come every week. I haven’t missed a single session.” (Mother who participated in the workshop in Bnei Brak)

Benefits of the Program for the Teachers, Children, and Parents

Effect of the program on the teachers

The different interviews revealed that the program benefited the teachers at the theoretical and practical levels. Within the framework of the training sessions that the teachers attended (only in Bnei Brak), they **acquired knowledge and tools that helped them to introduce new concepts to the children:**

“I acquired a lot of knowledge through these training sessions, how to explain concepts to children, for example, what it means to float and what it means to sink ... This gave us a lot of knowledge for work.” (Teacher in a school in Bnei Brak)

Similarly, the activities in the school allowed them **to evaluate their teaching methods and to make changes in those methods:**

“I got a lot out of this, also in the classroom, how to get the children thinking, how to develop each topic further with the children, how to explain things to them, to ask them questions...” (Teacher in a school in Elad)

“I’ve gotten feedback from them [the teachers], that they take the ideas, the approach to learning, how children are taught certain topics, and they do their best to adopt them...” (Supervisor of a school in Bnei Brak)

In addition, interviews revealed that the teachers **learned how to implement activities from the program and also got ideas for additional activities:**

“This is perhaps an added benefit of the program. Teachers see a model of creativity, because whenever I put together a new toy they tell me, ‘Wow, the ideas are endless, the sky’s the limit.’ They say that as part of their work they sometimes try to be creative, but don’t always succeed in that. So, they get ideas about things that can be done and that gives them a sort of model of how they can be creative with the materials they have at school.” (Program facilitator)

In addition, some of the teachers reported **using the products of the program together with their own children:**

“When we made the harp, I took it home and taught my own kids, from the little one to the oldest ... They all enjoyed hearing the sounds ... I take home most of the projects.” (Teacher in a school in Elad)

Effect of the program on the children

The different interviews revealed that the program contributed to the development of the children’s thinking, in that it allowed them (within the framework of the activities) **to ask questions, draw conclusions, and make analogies:**

“Each lesson, you can say that the children did something that day, something happened in their minds ... We really touch on higher thinking, reaching conclusions, making analogies ... I think that we reach high levels of thinking, even levels usually reached in [later years of] school, all sorts of analogies ... This is something that comes out of the program without specifically being intended, through the discussion with the children ... It gives the children experience with a very advanced level of thinking and I see children who do this very well.” (Program facilitator)

“It really stimulates thinking ... I see my children, they’ll draw conclusions from things, demonstrate things, and then suddenly connect those things will all sorts of things at home, all sorts of games, ‘Ah, this is like what we did with the equilibrium and that’s why this worked and that fell ...’” (Mother who participated in the workshop in Bnei Brak)

The program also contributed to the children’s **acquisition of scientific concepts** and allowed them **to engage with science topics** that they would not have been exposed to, if not for this program:

“From lesson to lesson, we see how the children bring the concepts they’ve already learned, even what they learned last year ... They remember, for example, the concept of equilibrium. During the first lesson that I taught about equilibrium, they yelled, ‘Equilibrium!’...” (Program facilitator)

“The children learned new concepts that, I think, if he [the facilitator] hadn’t come They’re learning about physics, laws of physics that they wouldn’t have learned. In our sector, relatively speaking, you could say that up until now, this hadn’t been part of the curriculum.” (Teacher in a school in Elad)

The different interviews revealed that the children **greatly enjoy** the activities and eagerly await them. Similarly, the mothers in the focus group noted that their children enjoy sharing what they learn

with the other members of their families, telling about their experiences and sharing the science toys that they receive, and this appears to contribute to their **feelings of self-confidence**:

“It’s very strengthening ... I see that this really contributes to his self-confidence from the knowledge that he possesses, he feels confident about it.” (Mother who participated in the workshop in Elad)

“It was really nice to see how he, as a little one, comes to his dad and ‘quizzes’ him. Now, there’s something that he can pass along.” (Mother who participated in the workshop in Elad)

Effect of the program on the parents

The interviews with mothers from the focus group revealed that the workshop allowed them **quality time with the child** and provided them with **knowledge and new concepts**, as well as **ideas for projects to do with their children during their leisure time**:

“After I was with him in the afternoons throughout the process, you can re-create it with him another time ... What happened, what’s the reason behind it ... You’re a partner ... It’s very significant to understand why things happen ...” (Mother who participated in the workshop in Elad)

In addition, some of the mothers noted that the workshop led them to **new insights regarding the raising and education of their children**:

“I reached the conclusion that, basically, anything can be explained, even if it looks big, and you can bring it down to their level, because I hadn’t believed ... There were things that I didn’t understand and, now, they’re simple and clear...” (Mother who participated in the workshop in Elad)

“I think that it provides a very, very good model, to not answer questions but rather to ask the child what he thinks ... To let the child see if his answer is logical or not...” (Mother who participated in the workshop in Bnei Brak)

Furthermore, the mothers noted that other family members were also **involved in and benefited from the activities**:

“There’s no question that this became a topic of discussion at home. I have a son in boarding school who comes home once a week and in recent weeks, as soon as he gets home, they want to show him what they did at Achiya ... I see him sit with them and my son explains what they did, what they learned and how it works and the older son helps him and they do it together and it is a really interesting conversation. Or, the last two times, when my daughter came instead of my son, and when we got

home, he was waiting by the window and yelled, 'What did you do today? What did you learn?' ..."
(Mother who participated in the workshop in Bnei Brak)

"When we get home, it's to show each one, and when Dad comes home, it's to eagerly explain it to him. And so, Dad sits with them and checks, maybe it could have been done differently, they really try to discover all sorts of additional ideas." (Mother who participated in the workshop in Elad)

Alongside the above, we note that in the interviews with the people who play different roles in the program, there were no reports regarding any effects of the program on the parents, aside from their general satisfaction with the program.

Difficulties and Challenges

The interviews with different individuals involved with the program revealed that they faced different types of difficulties and challenges with regard to the program and related activities.

Difficulties and challenges related to the program

One of the clear challenges was **getting the program into the schools** (particularly in Bnei Brak) **and implementing it**. This was due to sensitivity in the ultra-orthodox sector with regard to programs which originate outside the sector:

"It's difficult to bring it in and there's a concern that it will blow up for no apparent reason.... There are all sorts of forces behind the scenes that can bring down the program and we can't anticipate where active opposition might come from..." (Program director)

In this context, the director of the program noted that, this year, the program was discontinued in one of the schools in Bnei Brak in the face of opposition from different actors in the ultra-orthodox sector. Another challenge mentioned in the interview with the program director was the **recruitment of suitable personnel** (culturally and professionally suitable) **to lead the in-school activities**. In this context, he noted that two facilitators were replaced last year after they were found to be unfit for the job.

Difficulties and challenges regarding the activities

One of the challenges mentioned in the interview with the program facilitator **concerned the need to adapt the program content for the cultural needs of the participants**:

“If I were to deliver the lesson the way it was given to me, to ultra-orthodox eyes, it would be devoid of content ... And since we’re under a critical eye, and the teacher is present during the lessons that I deliver, I need to satisfy him ... He wants to see some sort of meaningful educational content. ... I need to be very sensitive to nuance; I need to know the teacher very well, to know what’s really important for him to have in his classroom ... Otherwise, every lesson will be a failure, there’ll be friction with him and he could say, ‘Don’t come back.’” (Program facilitator)

In addition, the program facilitator noted **emotional and physical difficulties** that he faced **due to a lack of cooperation from some of the teachers** (particularly in Bnei Brak):

“There are those who offer passive opposition, in that they really don’t cooperate ... They don’t show any interest in the program they say, ‘Oh, it’s another program, I know all about those programs.’ ... They’re present in the classroom because the principal makes them. They’ll lend a hand because they have to, but.... they don’t want to ... Sometimes, I’d actually prefer that they not help because sometimes they just destroy the toy, just to fulfill their obligation, they’ll make a hole in the wrong place or something like that ... When I don’t have good teachers, it’s really hard, because I don’t have any help ... Sometimes I leave the class completely wiped out. Sometimes I need to work with 30 kids, to build the toy with everyone ... Also, I feel that I’m on their turf and they don’t really accept me in a friendly manner; they don’t believe in what I’m doing; they don’t give me a good feeling.” (Program facilitator)

Another difficulty mentioned by the program facilitator concerned **delivering the lessons in buildings that are not suitable for the activities**, specifically in Bnei Brak:

“In Bnei Brak, the classrooms are small and crowded ... When I make an airplane with a rubber band and the kids need to make the plane fly in the classroom, it goes a meter and a half and then hits the wall ... In Bnei Brak, I also go to classes in which there are 30 or more kids in a room that’s only 3 × 3.” (Program facilitator)

The program facilitator also mentioned the **logistical difficulty** of independently gathering the materials for the activities:

“I have a hard time with the conditions that the program gives me because I don’t have a car. For example, I need to pick up the toys, they’re not delivered to my home ... I need to pick them up from the Achiya warehouse in Bnei Brak ... I need to stand there in the warehouse and count ... sometimes it takes me two hours.” (Program facilitator)

The interviews with the teachers did not reveal any particular difficulties with the program.

Needs and Suggestions for Improvement

The interviews revealed a number of suggestions and directions for future action, including **expanding the program to other towns, operating the program for older children, and finding solutions for logistical difficulties**. The program facilitator also emphasized the need **to strengthen the treatment of the implementation aspect in the teacher training**:

“The teachers come to the training without any motivation ... They enjoy it, but they don’t have much motivation to show up, because they don’t understand the value ... They don’t show up to the training with a sense of mission ... It’s also important to talk with them about developing the thinking of young children through the use of our science toys and principles that they can use in their own work. This is something that could really help them, to strongly connect [the program content] with their work.”

(Program facilitator)

The interviews with the mothers in the focus groups yielded several suggestions for improving the workshop, including **distributing information sheets after each activity together with assignments to do at home, expanding the workshop to include more sessions, and dividing up the children in the sessions by age**.

Future Plans

The interview with the program director revealed that there is a desire **to expand the program’s activities to additional towns** (once a source of funding has been secured) and **to include at-risk children and at-risk teenagers**. The program director noted that individuals in the city government of Safed have expressed significant interest in the program.

Conclusion and Recommendations

As part of the Creative Thinking program, over the course of the year, activities were carried out in schools, there were teacher-training sessions, and joint workshops were held for mothers and their children. (The children who participated in those workshops did not participate in the classroom activities.) The interviews revealed a high level of satisfaction with the program, particularly with regard to its contribution to the children's cognitive development, the science concepts they acquired, and how it strengthened their self-confidence. The program also provided the teachers with knowledge of science concepts which helped them to evaluate their own teaching methods and provided them with ideas for classroom activities.

From the focus groups with the mothers, we learned that the program also affected their immediate environment (i.e., additional family members), which was also involved and benefited from the activities.

However, the those professionals implementing the program faced several difficulties and challenges, including getting the program into schools (particularly in Bnei Brak), recruiting appropriate personnel, adapting the program to the cultural needs of the target population, and securing the cooperation of the teachers.

In terms of recommendations for the improvement of the program, first and foremost the evaluators recommend expanding the program to additional towns/cities and including older children. The evaluators also recommend increasing the number of workshop sessions and providing workshop participants with written information about the activities.

However, in light of the challenges detailed above, the evaluators recommend that any expansion of the program should be accompanied by efforts to increase the involvement and cooperation of the teachers and, similarly, the involvement of the parents in the program. The involvement of teachers and parents is critical for the implementation and establishment of the program.

In terms of the teachers, they should be provided with detailed information about the program and its underlying rationale. They should be included in the planning of the activities and their ideas attitudes, and needs should be taken into account in the planning process. They should also be included in the delivery of the lessons (under the supervision of the program facilitator). In addition, it is

important that the training sessions emphasize practical aspects and link the program principles with the teachers' own work in the classroom.

With regard to the parents, the parent-child workshops should continue and expand to include additional families (including those whose children participate in program activities at school). The parents should also continue to receive written information about the activities and assignments for parents and children to work on together at home.