



Evaluation of the Science Mobiles Program

Executive Summary

November 2013

Program Description

The Science Mobiles program was launched in 2009, based on the premise that preschoolers should experience and be introduced to science and technology. Early exposure to scientific principles and phenomenon will increase the children's cognitive development and create greater preparedness for school. Theoretically, children who participate in the program are expected to acquire a deeper understanding of scientific concepts at a later age. Another underlying principle of the program is that the early learning experience can affect the children's perception and level of interest in science, the way they perceive their ability and the enjoyment they derive from this field.

The program aims to channel the natural innate curiosity and motivation of preschoolers in order to develop scientific-technological thinking skills and competencies in young children, along with positive attitudes towards science and technology.

The Research Goal

The research is designed to obtain indications regarding the program's effectiveness and to provide information to the program's operators for the purpose of improving the program.

Methodology

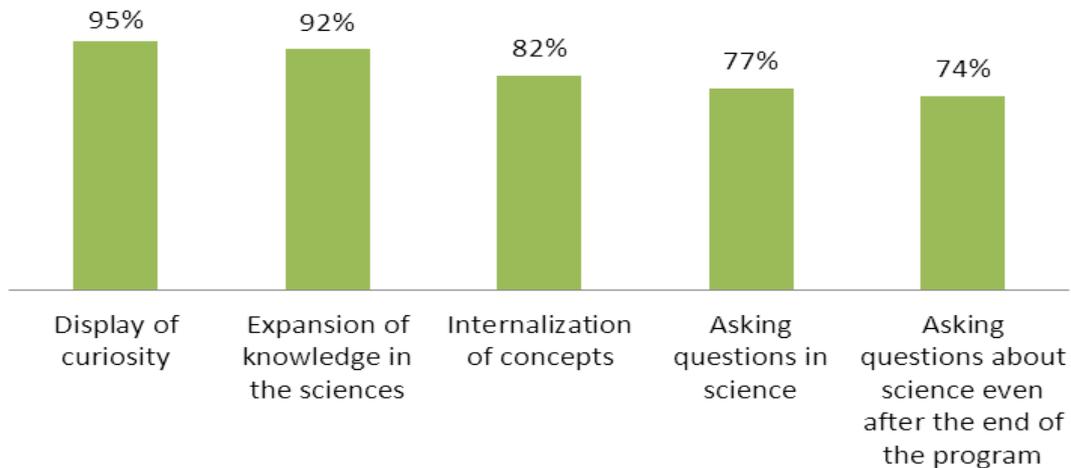
41 preschool teachers who participated in the program answered questionnaires at the end of the 2012/3 school year. In addition, questionnaires were given to 25 parents, and observations were conducted of program activity. The research tools were developed for the study and examined the following variables: the program's contribution to development of science literacy among preschoolers, the level of parental and preschool teacher involvement in the activities, scope of the activities, general attitudes towards the program and quality of the lesson plans.

Main Findings

- According to the preschool teachers' reports, participation in the program appeared to have developed curiosity among children in sciences, as well as scientific thinking. For instance, 95% of preschool teachers claimed that the pace and frequency of questions about the physical world increased among preschoolers. 92% of the teachers reported

that the program helped develop thinking skills. Moreover, the teachers claimed that the children showed comprehension of scientific principles and used scientific terminology.

The program's impact on children according to preschool teachers' reports (N=39)



* Percentage of preschool teachers who agreed with the statements pertaining to changes that occurred in the children

- According to reports from parents and preschool teachers, the program helped expand the children's knowledge of the sciences as well as the teachers' knowledge. As evidenced by the questions given to children through parents, children answered correctly 5.6 of the 7 multiply choice questions regarding scientific phenomena (80%).
- The program had a moderate effect on the level of scientific literacy in the preschool. Over 60% of the preschool teachers reported that the program increased their actual occupation in the sciences, expanded their knowledge and encouraged the establishment of a science corner in the kindergarten.
- According to parents' reports, the tools provided by the program are not translated into activity at home. Parents did not report any significant changes that occurred in children in terms of curiosity and interest in science. They did not carry any science-related activity at home, and made limited use of the sheets distributed by the preschool teacher.
- An analysis of the observation conducted in preschools revealed that the teaching process during sessions was coherent and logical (revision, introduction, explanation, questions, experience). At the same time, there was no summary of the activity. Significant learning principles were used (learning through play, demonstration, hands-on experience). At the same time, the teaching is based on lecturing and less on investigation. As such, some of the tangible activities were not sufficiently practical and did not advance learning through discovery. In addition a rapid transition was made from one topic to the next.

Conclusions and Recommendations

As a result of the program, the children showed more interest in the sciences and in natural phenomena, and the level of the preschool science literacy has been affected. At the same time, the children's interest is limited to preschool and is not observed at home.

Recommendations:

- The curriculum should be improved based on the principles of learning through discovery.
- The level of parental involvement in the program should be increased by convening meetings, sending information sheets and scientific assignments.
- Hands-on experiences should be added, e.g. creative work on sciences.
- The preschool teachers should be encouraged to continue the scientific activity even after the end of the program and to create a science corner in the preschool.