(5) Improvement of Science and Mathematics Education in Primary Schools

In Egypt, primary education indicators have shown remarkable progress. Especially, quantitative aspects at the primary level were seen to improve during the 1990's. The Government of Egypt still places a high priority on education in the national development plan. However, qualitative aspects of primary education have not yet been fully accomplished. It is considered to be a big problem that pupils tend to be taught in a force-fed way and that they should learn by heart the knowledge only to answer questions. In response to this situation, the Government of Egypt requested Japan to improve primary education especially in the field of mathematics and science.

Project Site

From 1997 to 2000, JICA implemented a project called "the Development of Creative Science and Mathematics Lessons in Primary Education". In the project, teachers' guidebooks were edited by JICA experts in cooperation with researchers at the National Center for Education Research and Development (NCERD). The guidebooks were one of the tangible outputs of the project and were highly appreciated by Egyptian authorities and teachers.

However, even if teachers have the guidebooks, it is not always the case that they can make full use of them in their classes. In addition, some parts of the guidebooks needed to be revised after application into the real settings. Therefore, the Government of Egypt requested further cooperation from Japan so that the guidebook could take root in the method of teaching in Egypt. JICA, again in collaboration with NCERD, decided to implement a new project entitled "Improvement of Science and Mathematics Education in Primary Schools" during the period of April 2003 through March 2006.

Percentage Distribution of Population (10 years old and up) by Educational Status

Educational Status	Female	Male	Total
Illiterate	11,005,746 (50.18%)	6,640,279 (29.00%)	17,646,025 (39.36%)
Read and Write	3,209,817 (14.64%)	5,189,436 (22.66%)	8,339,253 (18.74%)
Primary	1,829,547 (8.34%)	2,325,677 (10.16%)	4,155,224 (9.27%)
Less than university certificates	5,026,752 (22.92%)	7,042,349 (30.75%)	12,069,101 (26.92%)
University	852,998 (3.89%)	1,694,997 (7.40%)	2,547,995 (5.68%)
Not Stated	6,067 (0.03%)	7,755 (0.03%)	13,822 (0.03%)
Total	21,930,927 100.00%	22,900,493 (100.00%)	44,831,420 (100.00%)

Source: Central Agency for Public Mobilization and Statistics 2001.
The Statistical Year Book 1993-2000

Our project has been focusing on the pupils' creativity and willingness to learn, which is paid a lot of attention by the Ministry of Education. As a result, the activities and communication in classrooms has become more and more lively, which Egyptian teachers and pupils' parents are very pleased with. One of the parents was surprised to see her daughter raising her hand to give her opinion in the classroom and thanked the project, saying that such a scene was previously beyond imagination.

Project Chief Advisor
Dr. Toshio Hasegawa

A teacher told us that we should suggest another method to measure the achievement of the pupils to the Ministry of Education, since the effects brought about by this project can not be accurately measured by the scores of unified tests given by the government.

Both Egyptian teachers and pupils are fond of our project and curious about Japan in addition to science and mathematics. Whenever we visit schools, we are busy with responding to the request of the pupils who ask us to write their names in Japanese letters.

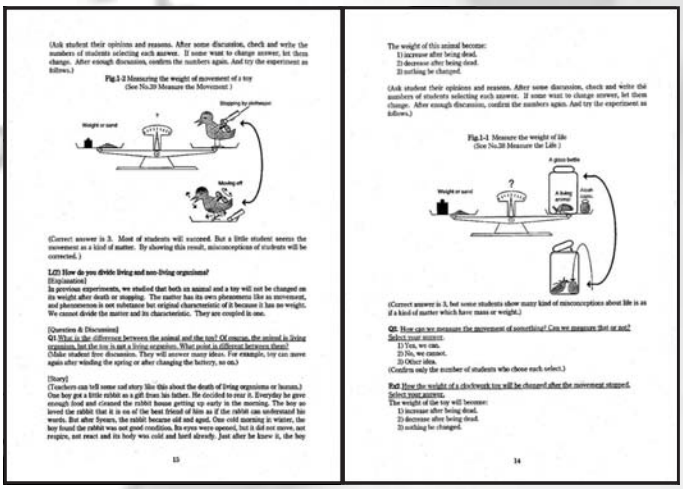
In spite of the limited facilities, children here are studying hard with starry eyes. We hope to have prominent scientists among them in the future.

Ms. Amal El-Shahat
Assistant Researcher

Our educational aim in the field of mathematics in this project is to help students learn by using a problem solving strategy.

As we visited the four pilot schools, we shared our ideas with teachers to solve the problems they faced. And based on them, we had many meetings and seminars held by Japanese experts to prepare for the teaching plans and to discuss relevant issues.

During the project, we could see a positive change among students at school. Students started to work more individually or in-groups better than before. Though we still have some difficulties, by suggesting solutions we're trying to get over them one by one.



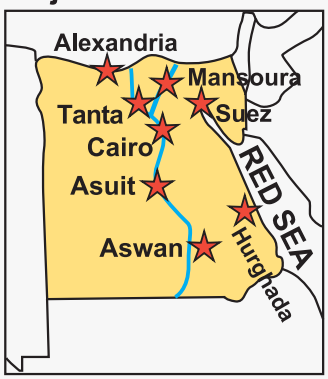
teachers' guidebook (science)

3. Global Environment

(1) Environmental Monitoring Training Center Project (EMTP)

In Egypt, rapid industrialization, urbanization and an increase in population in recent years has caused serious problems of air and water pollution. In the year 1994, the Government of Egypt enacted Law No.4 of 1994 for the protection of the environment and introduced environmental regulatory standards of water and air. The Egyptian Environmental Affairs Agency (EEAA) was reorganized and was required to be responsible for the enforcement of this law.

Project Site



Therefore, EEAA came up with a plan to establish an environmental monitoring network, consisting of the Cairo Central Center (CCC), which would serve as a reference laboratory and training center, and eight Regional Branch Offices (RBOs), which would work as decentralized arms of EEAA.

In response to a request from the Government of Egypt, Japan donated the necessary equipment such as spectrophotometer, mercury analyzer and stack gas sampler to CCC and RBOs by grant aid in 1996 and 1997. It was followed by JICA's technical cooperation on Environmental Monitoring Training Project launched for a period of five years from September 1997 until August 2002. It was the first ever technical cooperation concerning the environment in Africa and the Middle East. During the five years, CCC and RBOs were established and training courses were given by Japanese experts, EEAA staff gained the ability to monitor water, air and industrial solid wastes appropriately and efficiently. Also in 2002 additional equipment and spare parts were donated and a 2 year follow-up project was implemented to continue until the end of October 2004.

Overlapped Kafr El Zayat (Middle Delta) map and distribution in NO_2 concentration

JICA expert, Eng. Terumitsu Haseba giving a lecture to the staff of EEAA