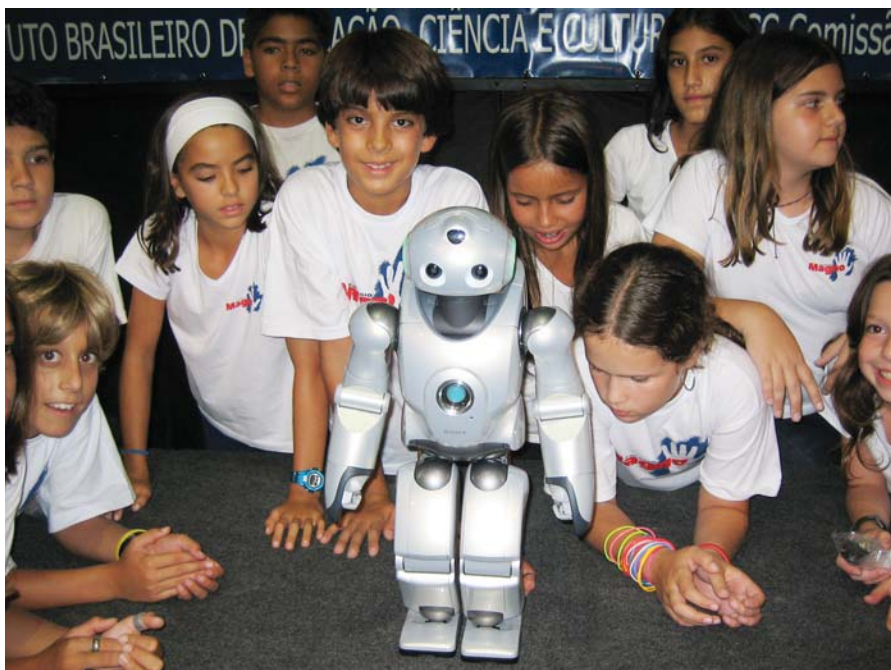


Robot Evokes Children's Interest in Science

– UNESCO Program Wows Kids in & outside Japan –

By Kikuta Masanori

Photo: NFUAJ



QRIO bows following a demonstration as students look on at a school in Sao Paulo, Brazil.

An “intelligent” humanoid robot greets schoolchildren in their local language, dances to music and plays soccer, enchanting them and arousing their interest in science and technology. It was a scene commonly witnessed at every place in Japan, other Asian countries and Brazil visited by the robot under a UNESCO-related science program in 2004-06. The program was timed with the United Nations Literacy Decade (2003-12). According to UNESCO, 860 million adults are illiterate and 113 million children have no access to school.

Used in the science program was the bipedal QRIO robot developed by Sony Corp. “Throughout history, curiosity has been a source of inspiration, expanding the possibilities for the future,” says a Sony website page dedicated to the robot. “QRIO embodies Sony’s dreams

and most advanced technologies in recognition, motion control, communications, IT and AI.”

Hands-on Science Class

The QRIO Science Program was sponsored by a UNESCO-supporting NGO based in Tokyo, the National Federation of UNESCO Associations in Japan (NFUAJ). The program was part of the NFUAJ’s ongoing campaign aimed at offering opportunities for non-formal education to out-of-school children and illiterate adults in rural areas of developing countries. The movement is modeled after Japan’s civilian-run schools in feudal days, called *terakoya* (literally meaning a “temple hut” in Japanese). Such schools provided literacy and basic education to the children of common people in the 14th to 19th

centuries. These *terakoya* facilities went a long way toward the rapid development of Japan’s modern education system.

In cooperation with Sony, the NFUAJ launched the program – a hands-on science and technology class – in Sendai, northern Japan, on September 23, 2004. Sendai is the birthplace of the private sector’s UNESCO activities. QRIO, acting as a “science messenger,” performed in front of some 40 primary school pupils in the first session and about 70 high school students in the second. “I am aspiring to become an engineer. I learned many things today and I think I should study hard,” said a high school student. “I am learning robot control at school,” said another. “I am especially interested in how QRIO can balance and recognize people. I hope I can develop such a robot in the near future.”

Fascinating First-Time Experience

India was the first country outside Japan to host the science program. It was the beginning of direct corporate participation in the NFUAJ’s welfare program abroad. “UNESCO will be advanced through such collaboration. I hope this will be a new model for promotion of our social development activities in other countries,” said Terao Akito, director of the NFUAJ’s Education & Culture Division. India was chosen as a host country mainly because 1,000 out of some 6,000 UNESCO clubs worldwide are there.

In October 2004, QRIO traveled to New Delhi and then to a rural area in southern India for demonstrations. In the capital, a robotics-teaching private school was the venue, with more than 250 students cheering loudly each time the robot talked, fell and stood up, and kicked a soccer ball in a packed auditori-

Photos: NFUAJ



QRIO reacts to the sound of a handclap at a Sao Paulo school.



People in a remote Indian village watch QRIO perform.

um. The loudest cheers arose when QRIO danced. "It was very interesting. We rarely get such opportunities," said Mohit Taneja, 15. "As a student of robotics, one gets to learn a lot from such live demonstrations." Teaming with his partners, Taneja has won several prizes at national robotics competitions. For most students, the hour-long performance was a fascinating first-time experience, gluing them to their seats even while the robot was resting after the demonstration.

In Chikanandi, a drought-prone village of 2,500 in Karnataka State, dozens of poverty-stricken children 11 to 16 years old gathered for their first brush with high-technology science. The younger of the children watched the robot first with fear, then with curiosity that soon turned into a delightful squeal of laughter when it started dancing. Neither Japan nor science figures in the daily curricula of these children, who are only given basic lessons in reading, writing and arithmetic. Along with some adults, they attend school for two hours in the evening after a day of hard work in corn or sugarcane fields or at construction sites. For these children, many bare-footed and in tattered clothes, Japan was an alien country until QRIO visited. The robot startled the audience when it introduced itself in the local Kannada language. QRIO's antics evoked interest and, after the initial shyness, many queries posed about the

robot were similar to those made by their more privileged counterparts in the elite private school in New Delhi. Chikanandi, hundreds of kilometers away from Bangalore, India's Silicon Valley, is one of 45 villages in the region where the NFUAJ's *terakoya* movement has helped set up *terakoya* community centers for literacy and basic education.

"I am very happy with the response in India and want to take this to other countries where the NFUAJ operates to maximize the power and capacity of QRIO in communicating the message," said Muto Katsumi, general manager of Sony's Entertainment Robot Co. (See the Editor's note at the end of this article).

More Vivid Reactions in Brazil

Muto's words became a reality as QRIO toured Vietnam in January 2005, Thailand in September that year and Brazil in February 2006. In the southeastern Brazilian city of Sao Paulo, the robot danced samba and played soccer, charming a group of students at a local junior high school. "It surprised me when it danced samba," said Gustavo Vencigueri Azedo, 10, as he tried to reproduce the robot's steps to dance the national Brazilian rhythm. The performance included dancing different rhythms, falling and getting up from the floor, reacting to sound stimulation and talking to local students in Portuguese.

"My classmates were very impressed when the robot walked toward a soccer ball and kicked it," said Karen Pincelli Izzo, 11. Izzo could hardly control the excitement in her voice while she described the experience, saying the encounter stimulated her classmates to pay more attention to science classes. "The robot has shown us that this is the right track that leads to motivating students toward technology," school principal Miriam Tricate said, emphasizing that she was impressed by the students' interest in talking to the Sony technicians who attended the event.

The school was selected to host the first leg of the Brazilian tour, which also took QRIO to another school in Sao Paulo. "Brazilian children have behaved in a more vivid way in comparison to what I have seen among children in the three Asian countries," said Sakamaki Toyoko, deputy director, Education & Culture Division, NFUAJ. **J.S**

Editor's note : Sony has discontinued robot development and its subsidiary, Entertainment Robot Co., has been disbanded. Consequently, the QRIO Science Program and other activities involving the Sony robot have been halted. Parts of the article were contributed by Kyodo News staff reporters Kanak Nair of the New Delhi Bureau and Lenilson Ferreira of the Rio de Janeiro Bureau.

Kikuta Masanori is Deputy Director, Information Services Department, KK Kyodo News.