

Improving Science Education in Sudan and Ethiopia through a Model-based Approach

Lead academy: Sudanese National Academy of Sciences (SNAS)

Elected as a member in 2007, the Sudanese National Academy of Sciences (SNAS) is one of the youngest academies in the IAP network. Among its major activities is the promotion of Inquiry-based Science Education (IBSE) in the country.

Inaugural workshop

On 16-17 April 2013, the Future University in Khartoum, the Sudanese National Academy of Sciences (SNAS), and the International Centre for South-South Cooperation in Science, Technology and Innovation (ISTIC) organized a regional training workshop and a roundtable on science education focusing on IBSE. More than 150 scholars, school teachers and educational experts attended. In addition to scholars from Sudan and Ethiopia, there were participants from several other Arab and African countries. Two major objectives of the project were thus fulfilled, namely the participation of leading experts in IBSE as well as training of the trainers.

Among the conclusions of the workshop/roundtable were:

- Science education is critical to the uptake of science, technology and innovation in the developing countries;
- Science education should begin as early as possible in the education system;
- IBSE is recommended as one of the most successful methods for the promotion of science education; and
- The utilization of information and communication technologies can facilitate the process of learning and should be promoted.

During the workshop, Romain Murenzi, TWAS executive director, together with Muntaser Ibrahim, who leads the project, met with Souad Abdelrazzak, the Sudanese Federal Minister of Education. The minister informed Murenzi and Ibrahim of her ministry's plans to launch a project to promote the use of science kits in secondary schools based on UNESCO guidelines. It was agreed that SNAS would act in an advisory capacity.

The Future University, together with SNAS, convened a follow-up meeting in partnership with the Khartoum State Ministry of Education, also attended by the minister. Consequently, it was recommended that a SNAS project in Gedaref State in the east of the country becomes part of training activities on IBSE coordinated by the Future University.

It was also agreed that SNAS will supervise IBSE distance learning activities through its website. Within this partnership, SNAS, Mustafa El Tayeb, president of Future University, and Abdel Salam Majali, president of the Islamic World Academy of Sciences, signed a memorandum of understanding to foster IBSE and the popularization of science in Africa and the Arab world.

Field activities

A team comprising senior SNAS members plus two members of the Sudanese Academy of Young Scientists visited one primary and one secondary school in the town of Doka in Gedaref State during June 2013. During the visits, the focus group team held discussions with both teachers and students, with the results summarized in a report and a short video. Following the tour, one tablet loaded with bilingual science teaching materials and one pocket data projector were purchased and sent to each of the participating schools.

Based on student responses to questions posed by members of the team and students' enthusiasm for the subject of mathematics, the focus group came away with the impression that the students in these rural schools exhibited a level of knowledge about science comparable to their peers in some of the best schools in major cities, including Khartoum.

Other deliverables from 2013 included the publication of the *SNAS Newsletter*, as well as the first popular science magazine in Arabic, *Afaq*, or *Science Horizons*. The latter is expected to contribute in a major way to help achieve the project goals and disseminate IBSE modalities, thereby improving general science literacy throughout the region.



Cover of the inaugural issue of *Afaq*, a popular science magazine published by SNAS in Arabic.



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In June, a team of senior SNAS members and two members of the Sudanese Academy of Young Scientists visited Gedaref State in the east of Sudan to review the situation of the school system and teaching of science.