

National Science Day

Special Marketing Initiative

Nurturing teachers, for creating insightful scientists

Nothing inspires a student more than a motivated teacher capable of inculcating the spirit of enquiry and scientific temper in young minds.

So when the Kerala State Council for Science, Technology and Environment (KSCSTE) decided to take up a scheme to nurture talented science aspirants in the State, it focused its efforts on improving the quality of science teaching, starting from the school level.

The scheme, titled Nurturing Excellence in Science Teaching (NEST), is primarily aimed at attracting school students to science subjects and encouraging them to perceive the concepts of science.

"NEST seeks to reform the process of science teaching and learning in schools by promoting the investigatory type of project learning, developing supplementary resource materials and teaching aids and honouring outstanding science teachers," says V.N. Rajasekharan Pillai, executive vice-president, KSCSTE, and Principal Secretary, Science and Technology.

Rs.5-crore scheme

To formulate the action plan, KSCSTE organised a series of meetings with Principals of District Institutes of Education and Training (DIETs) and national-award-winning teachers.

The council has also signed a Memorandum of Understanding (MoU) with the Education Department to implement the scheme for teachers with an annual Bud-



RIGHT STEPS: Chief Minister Oommen Chandy inaugurates the Srinivasa Ramanujan Institute for Basic Sciences, to be based in Kottayam, at a function in Thiruvananthapuram early last year. Also seen are structural biologist M. Vijayan, Nobel prize laureate Ada Yonath from Israel, and V.N. Rajasekharan Pillai, executive vice-president, Kerala State Council for Science, Technology and Environment.

get of Rs.5 crore.

School-level activities

At the school level, the proposed activities under the scheme include

1. Upgrading the skills of science teachers to make science education more enjoyable, purposeful, and meaningful

2. Motivating teachers by complementing their work with resource materials, developing resource materials, and teaching aids by involving science teachers, educators, or experts and providing a platform to science teachers to share their experience

3. Building a stream of science teachers who can feel the excitement of science learning and teaching; identi-

fying dedicated and exemplary science teachers and recognition of their services by the government and other agencies; instituting awards for best science teachers in primary, secondary, and higher secondary levels; and

Training

In order to improve the skills of science teachers, it is proposed to coordinate all the State-level science teachers and train them. Training, mainly on science activities based on course curriculum, will be provided by eminent scientists from recognised laboratories and the R&D centres in the State. As an initial step to this, 20 per cent

each of high school (HS) and upper primary (UP) schools from each sub-district will be selected.

In the second phase, this will be extended to all the UP and HS and 20 per cent of higher secondary schools (HSS). In the third phase, all the schools, including HSS, benefit from this training programme.

The teachers will be provided with the resource materials such as lab manuals, experimentation kits, etc. that can complement the practical classes.

The resource materials / teaching aids can be designed and developed in consultation with the experts concerned. The resource materials mainly focus on the

preparation of practical manuals with improvisation (from Classes 4 to 10) and developing low-cost and better quality experimentation kits.

The scheme involves the creation of a science blog to highlight the major achievements of students and science teachers. The publishing of a journal, School Science Journal, is also part of this project. Periodic regional workshops will be conducted for science teachers. This can provide them a platform to share their experiences in school science teaching and give an opportunity for interaction with experts in this area.

The science teachers who show dedication and enthusiasm in science learning and research will be identified and selected to form a pool of coordinators and trainers.

The exemplary school teachers from the school science stream will be identified and steps will be taken to give them due recognition. This will be achieved by regular monitoring and screening of the science activities and projects in schools.

A specific format will be created for this and screening done at three levels with [1]. AEO/ BPO/ DIET/ Science club convener/ Science experts [2]. DEO/ DIET/ HSS representatives/ Science experts/ Science club representatives and [3]. DDE/DIET Principal/ HSS/ VHSS coordinator/ Science experts.

The district-level presentations of the science teachers in a school will be organised in the DIET concerned followed by State-level presentations of selected persons. Proper criteria for identifying



There is nothing that stops India from becoming a global leader in science. If we invest properly with the support of industry and government, and with the moral support of society as a whole, I do not see why we cannot be leaders in the world in science. Of course, this would require our scientists taking up challenging problems in science.

C.N.R. Rao, Chairperson, Scientific Advisory Council to the Prime Minister

such teachers in various aspects viz research, learning aids, try out activities, science club activities, performance in class room activities, participations and presentations in seminars conducted in national and international levels, achievement as a teacher guide, laboratory establishment and maintenance, quality of student projects, and other extension activities will be prepared and considered for identifying such exemplary science teachers.

Based on the screening, the best science teachers will be identified and will be awarded at the sub-district, district, and the State levels. Science activities and projects will be designed to improve research aptitude among the students. They will be trained by competent science teachers to investigate and solve social problems scientifically. For this activity, a resource pool of eminent scientists and excellent science teachers will be formed to guide science research activities at the State level.

KSCSTE

1. Science educational research promotion for young

faculty. To inspire new, young faculty, who have Ph.D., and support them to continue their science teaching activities and related research, seed money will be given, based on their performance in their doctoral period (number of publications, citation index, conference attended). Assistance from their mother institute in the form of space and minor financial aid is also ensured for receiving the seed grant.

2. Training programmes for teachers
Short-term training programmes in instrumentation and capacity-building programmes in the form of seminars and interactive sessions with experts will be carried out.

3. A databank of renowned scientists and academicians in all branches of sciences will be created. Teachers can access the data so that they can identify the resource persons and invite them for seminars and training programmes at colleges or universities.

4. Quality improvement programmes for science

students
a) Summer schools and winter schools in the current areas of science will be conducted for postgraduate students.

b) Student scholarship for best students at UG and PG levels for each subject will be introduced. Financial assistance to students for institutional/ industrial visit/field trip as part of their project.

Proposed outcome

The scheme is expected to substantially improve students' attitude towards science. "The strong foundation of science concepts thus acquired at the school level would elicit interests in them to pursue science in higher education too," says Prof. Pillai.

He says the scheme has been submitted to the Department of Science and Technology, Government of India, for extension to the national level.

For feedback and suggestions, log on to www.kscste.kerala.gov.in or email to rajasekharpillai@gmail.com.