

Imparting science knowledge to students by Gujarat Council on Science and Technology: A Review

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Abstract : *The Gujarat Council on Science and Technology (GUJCOST) is playing a catalytic role in promoting the use of science and technology in the development process of the state. The science and technology council was constituted with a view to develop technologies appropriate to and in harmony with present conditions. The council has been catalyzing interaction between developers and users of technologies by bringing on a common platform to train students and new scientists on the one hand policy makers as well as administrations on the other. GUJCOST is organizing different science activities and programmes for students and spread scientific temper and attitude among the students of the state. This review is important to all schools and institutions of Gujarat those who want to provide information and practical knowledge to their students.*

Key words: *GUJCOST, Science, Council, Community.*

Introduction: The State Council is identifying the areas in which Science and Technology can be applied for development activities and achieve the goals of the State, with a particular emphasis to eliminate the prevailing backwardness, rural unemployment and poverty. It was also felt necessary to establish effective Communication and other links between, and Co-ordinate the activities of centers of Scientific and Technological Research, Government agencies and industries in order to promote the application of Science and Technology in the State. Innovations are drivers of development and growth. With their cutting-edge role in enhancing productivity, boosting growth, increasing efficiency and creating new economic opportunities, the culture of innovation as well as innovative mindset promises to offer cost-effective and efficient solutions to the society. As the economies world over are moving towards innovation-driven knowledge economies, efforts are under way at the National and State levels to incorporate innovation as a strategy. The State Government is committed to establish institutional mechanism to encourage innovation, characterized by scientific temper and a spirit of inquiry and reform. Its Programmes based on.

1. Science Popularization

- Establishment & Development of Community Science Centers Network in the State.
- Science Outreach Program through GUJCOST Science Clubs across the State
- Supporting Seminar / Symposium / Workshop / Exhibition / Paper Presentation / Conference / Training Programmes.
- Organization of Science Quiz / Science Seminar / Science Drama.
- Organizing Maths-Science learning Program.

2. Research and Development

- Establishment of Centre of Excellence in emerging areas of S & T
- Grant for Minor Research Project
- Gujarat Nano Mission
- Dr. Vikram Sarabhai Awards in Energy, Environment, Industry, Biotechnology and Information technology
- Grant for State INSPIRE Program for UG / PG students in Science, Engineering, and Pharmaceuticals (Student Sci-Tech Project)

Community science centres:

Community science centers (CSC) are playing important role through its activities for students in science learning. Its activities containing Development of Scientific temper and scientific attitude in daily life among the students are very much important for Socio-economic development of the citizen of the Gujarat state. It is also important and very much required to create awareness among the people about removal of prevailing superstitions from the society through scientific approach so that Socio-economic development can take place. It creates awareness among the people about harmful and non-scientific activities to society, prevailing superstitions, bad customs and to make efforts towards its removal in urban and rural areas.

Important Functions:

- Organize popular lectures / science dramas / street plays or other Programmes regarding superstitions removal.
- Provide scientific guidance about the natural occurrences like earthquake, eclipse, cyclone, astronomy etc.
- Programmes like Quiz, Elocution competition, Science Exhibition, science lectures, science related different competitions, celebration of the events related to inventions and inventors etc. shall have to be executed through science clubs.
- Organize awareness Programmes for healthcare, food and nutrition, diseases and resistance power etc.
- Organize Programmes regarding soil conservation, water harvesting and management, environment etc.
- Entrepreneurship development and training according to local needs.
- Organize awareness Programmes regarding agriculture and organic farming.
- Special awareness Programmes for the rural and tribal community may be organized.
- Organize scientific activities considering students of different age group, women and common people at community science center and rural places of different talukas.

Celebrations through CSC:

GUJCOST Science Quiz

GUJCOST Science Quiz is organized for secondary and higher secondary school students. The Programme is organized every year in all the districts of state in coordination with district quiz coordinator from Network of Community Science Centres and other academic/scientific institutes. Organized district and state level science quiz with participation of 1500 plus schools from the state with four teachers and one teacher from each school.

National Science Day

National Science Day is celebrated on 28th February every year in honour of Sir C.V. Raman for his legacy and discovery of the Raman Effect. Every year the theme for celebration is provided by the Department of Science & Technology, Govt. of India. The celebration is done by arranging popular lecture series, exhibitions and demonstration, essay writing, quiz

and debate competition on subjects of science and technology, gram sabha, development of low cost scientific toys and exhibition pertaining to it.

National Science Seminar

Gujarat Council on Science & Technology (GUJCOST), Gandhinagar was assigned for District Level and State level round of National Science Seminar. The theme of the Programme is provided by NCSM. The Programme is organized in all the districts of state in coordination with Community Science Centres and other academic/scientific institutes.

Western India Science Fair

For Gujarat state GUJCOST is organizing Western India Science Fair for secondary school students, higher secondary school students and school teachers.

Science Drama Competition

GUJCOST conducts/organizes state level National Science Drama competition in Gujarat state. District level competition was conducted through its network of Community Science Centres existing in 18 districts of the state. District winner team is sent for state level competition, from where one team was promoted to participate in Zonal Science Drama Festival.

National Children Science Congress: Making of a Scientist

Children's Science Congress is targeted to spread the concept of the method of science among the children through their project activities adopting the principle of 'Learning through doing'. The world of a young child is full of new foods to taste, new people to meet, new games to play, words to understand, places to visit, and concepts to master. The infant and toddler will touch, taste, smell, climb over, poke at, take apart, watch, listen, and learn more than at any other time in life. It is, simply, how we learn. Science is better defined as a way of observing and thinking about the world, and communicating these thoughts to others. Experience and research show that young children are excited about science when they are given the chance to "hands-on" science. Not only are hands-on experiences a great way to learn, but they are also a great way to get children excited about science. To give the children a firm foundation in science, it is necessary to encourage them to think about and interact with the world around them. Concrete experiences that require the use of children's senses, such as planting and watching a seed germinate, provide a strong framework for abstract thinking later in life. Many skills that help children succeed in science also help in everyday life. In the last few Children Science Congress Programs reveals that observing, inferring, measuring, communicating, classifying, predicting, controlling variables, interpreting data, and developing models are important science process skills. These skills are not just essential for careers in science, but they are important for almost any career, as well as in daily life.

The main objectives of NCSC

- Relating learning science with the environment around;
- Encouraging the children to understand the environment, its problems and prospects and to help them to find feasible solutions;
- Stimulating scientific temper through the use and internalization of the method of science, i.e. observation, collection of data, experiments, analysis and then arriving at conclusions.

GUJCOST science club:

GUJCOST had established 1000 science clubs in different districts. During this year, the council has established another 1047 new science clubs preferably in the rural areas for the promotion and popularization of science and technology at community level.

The Science Club has a specific objective as it aims to explain, exhibit and demonstrate scientific activities and to induct observational, logical and analytical approach among school students. Moreover, the activities and engagement in the science club will lead to create a scientific attitude among the young students which can inspire and encourage the students for their life-long learning.

Secondary School is an important phase of life where young students define their identity. By joining science clubs that expand his or her horizons, it helps define interests and allows bonding experiences for the future. Students have increased interpersonal skills, which help build healthy self-esteem. By building a positive identity, students are less likely to seek negative bonding experiences that may cause serious trouble for him/her. Lasting and lifelong friendships made as a result of clubs and school activities allow for a healthy self-image to transition your teen into a young adult.

School Science Clubs are important, make no mistake. They give kids something to do after school, and give them something to look forward too. The things you learn, and the friendships you make from doing things after school is reason enough to make sure that they stick around.

Objectives

- Inculcate scientific thinking among school children.
- Explain, exhibit and demonstrate curriculum based scientific activities to students.
- Develop easy and understandable methods of science and mathematics learning for students.
- Induct observational, logical and analytical approach among students.
- Explain and exhibit usefulness and importance of science at various stages of life to students.
- Design, organize and execute various scientific competitions and Programmes at district and state level for students.
- Bring awareness against existing superstitions, false beliefs and prejudices of society.
- Build scientific temperament in newer generation.

Maths - science questionnaire Programme:

In order to popularize the Mathematics and Science among the students of Std. IX and Std. X and also to solve their difficulties, GUJCOST has been designed a Mathematics and Science teleconferencing questionnaire Programme since 2007 through BISAG SATCOM studio. The Programme aims at solving the queries of students in Math and science and in turn helps in increasing and retaining interest of students in these subjects as well as attracts them to pursue career in basic sciences.

Objectives

- Maths Science Questionnaire Program (MSQ) aims to solve the difficulty of briefly good Teacher in secondary school for science and Maths.
- The Program has to deliver lecture in a very attractive and fascinating manner with the use of multimedia presentation.
- The Program initiating lot security and understanding the subject matter in an interacting way and encourage students to ask creative question to the experts.
- The entire processes demonstrate the use of science & technology in teaching and learning process.

Beneficially

- The Program is designing for standard IX and X.

- In Gujarat Council on Science and Technology (GUJCOST) there are 2 lakh students are studying in standard IX and 3 lakh students are studying in standard X in Gujarati medium under state education board so there are also more than 5000 teachers who are also elegant in science and Maths teacher in this classes.

Conclusion:

GUJOST boosting growth, increasing efficiency of students as well as people by organizing popularization science Programs innovation-driven knowledge economies, keeping efforts under way at the National and State levels to incorporate innovation as a strategy.

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