

TEACHING OF SCIENCE IN UPPER PRIMARY SPECIAL TRAINING CENTRES FOR OUT-OF-SCHOOL CHILDREN

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Delhi State Science Teachers' Forum (DSSTF) is an organisation of science teachers of different management schools of Delhi. DSSTF was conceptualised and visualised with the objective of inculcating scientific attitude, scientific temper in teachers and students, to popularise science subject in schools by bringing quality of teaching science with the help of hands-on activities/science kits, free science teaching camps (for SC/ST and economically backward students) and conducting workshops, seminars, exhibition and celebration of National Science Day and birth days of eminent scientists. For improving and increasing the popularity of science subject in schools of Delhi, science open merit test is introduced by DSSTF in Class X, so that the quality crop of science students could be created to benefit students of Delhi. Among other activities of DSSTF special mention is to be made of training of lab assistants, training of science teachers, preparing manual and material for science teachers teaching at elementary and secondary levels. The main activity of DSSTF is free science teaching camps (for SC/ST and economically backward students) for elementary and secondary classes. The main feature of these camps which are running in government schools of Delhi since 1989 is that more than thousand science teachers, who are life members of the forum, are teaching in these camps voluntarily. These camps are arranged during autumn and winter breaks. All science teachers who offer to teach in these camps are given subjects of their priority including physics, chemistry and biology stream. The topics are assigned to DSSTF members as per their specific interest in theory and practical at the elementary and secondary levels. These teachers are trained for performing practical and scientific activities related to their topics by experts of DSSTF. In the year 2016, DSSTF has launched a new innovative project of science for upper primary students of STCs running in schools of Delhi by SSA to whom even fundamentals of science are not known. These STCs are run by SSA Delhi funded by MHRD, Government of India. The State Project Director of SSA and RMSA was approached by functionaries of DSSTF. The DSSTF members offered to teach science in these STCs all over Delhi and the kits provided by SSA Delhi was made available to these science teachers by State Project Director, SSA. This paper presents a successful intervention and our experience of science teaching with groups of out-of-school children in three government schools of Delhi.

Key words: *Developing scientific temper, popularisation of science, special training centers*

Introduction

The situation of science education at the elementary level all over the country is very alarming. After the implementation of RTE Bill 2009, i.e., no detention policy for the age group 6 to 14 years, even the basics or fundamental concepts of science are not taught. Science is learned by doing. Demonstrations and practicals play a great role for science at the elementary stage. This aspect is being totally overlooked in almost all

the government run schools, throughout the country. The portion of elementary education in science is even worse in the special training centres (STC's) for out-of-school children enrolled there. Maximum teachers appointed in STC's are not of science background. So you can visualise the state of science teaching there.

Keeping this in mind, DSSTF has taken the responsibility of creating awareness among teachers and students of special training centres. Interesting and moderating hands-on

activities connected with scientific temper and scientific attitude are shown and practised by STC students. In order to develop and inculcate interest in the subject, scientific activities related to students' day-to-day experiences and burning social problems, the lessons to be taught are articulate. For example, in Delhi the recent disaster was pollution due to crackers. Because of burning of crops in the NCR, pollution caused by vehicles both old and new, industrial pollution, the capital was adjudged as the worst in terms of particulate matter in the world. So to make the students aware of this and showing them to install indoor plants which reduces pollution, at DSSTF level it is in the form of a project in all upper primary STCs. Some plants were shown, distributed and get planted in schools. Students were motivated to keep some of the anti-pollutant plants at home. As far as science curriculum is concerned, activities as suggested by State SCERT and hands-on activities prepared under RAA programme by DSSTF measures were introduced in STCs.

Methods and Procedure

A list of upper primary STCs throughout the capital was procured. Willing science faculty members were identified who could cater to the subject needs of STC students as per locality. A list of STC, teachers, principals along with their contact numbers were also collected. A circular regarding provision of science kits for these STCs was put on the website. Principals and STC teachers were well informed about the DSSTF Investigator who was coming along with his topic. The STC teacher and lab assistant were timely informed to arrange material and apparatus concerned.

It was ascertained that the activity shown by the DSSTF member was practised by every student of STC. After every lesson, feedback was taken from all students and parents, on their hands-on activities, demonstrations and experiments by STC teacher. Video clippings of some of the classes were also prepared by STC teachers on their mobiles. The children were taken out of the classroom to school premises for actual study of scientific facts related to the class room topics. Some clippings in this regard were also designed which were later on shown to the students and parents in the community.

Results and Discussion

Though the time involved in the scientific activities was small because the project was started in late September but even in this short period the results were very encouraging. The students were over motivated about the subject than expected. The parents' response was also very positive. Some interviews of students with or without camera have shown that students of STCs were discussing classroom activities with their parents. In some cases teachers and principals of the school wanted that these activities performed by DSSTF members should also be repeated among regular students of Classes VI, VII and VIII.

The results have been discussed and shared among DSSTF members, with principals, staff and parents. All of them were given relevant suggestions also for capacity building of other teachers and students of the institution. In the discussion of stakeholders, it is concluded that these activities could be increased and STC students and STC teachers should create their own kits. DSSTF has taken note of it and

in the near future STC teachers and students were to be facilitated for preparing small science kits.

Conclusion

This project is gaining momentum and the working retired science teachers of DSSTF are of the view that this pilot project should be taken at the primary level also (from Classes I to V) for the age group (6-11) to create interest in science. Delhi science teachers forum has now taken this project as a mission. This project will run in all upper

primary STCs of SSA in Delhi throughout the year. The convenience of the schools, STC teachers who are coming to teach will be kept in mind while deciding and finalising the schedule of science teaching in these special training centres. At present, the following upper primary STCs are functioning:

1. Government Co-ed SS Nangli Sakrawati, New Delhi (South West-B)
2. GSKV Peeraghari, New Delhi (West-B)
3. GSBV Bijwasan, New Delhi (South West-B)

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