# STATUS OF SCIENCE TEACHING IN INDIAN SCHOOLS FOR THE VISUALLY IMPAIRED CHILDREN

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Education for all by 2000, including disabled children, is a global commitment. In this basic education, science education also has an important role to play. The teaching of science at the foundation stage of schooling deserves utmost care. But it is often given a low priority in special education. The disabled children also have a great need, like anyone else, to learn about the world around them where scientific and technological advancement affect everybody's life. Science can be used as a motivation to stimulate learning in a number of different academic and social areas and even to provide a basis for vocational education leading to employment opportunities in the modern technologically advanced environment.

The Workshop Department of the National Council of Educational Research and Training undertook a project on "Adaptations in Science Equipment and Instructional Material for Disabled Children at Elementary Stage" in order to promote science learning with the help of adapted science equipment and instructional material for the visually handicapped children. In this project a study was undertaken with the following objectives:

(i) To get background information about the way science is actually taught in the schools for blind children, in the "special setting" schools, and in the integrated schools (Integrated Education for the Disabled —IED).

(ii) To find out the areas of improvement and deficiency in order to suggest further activities to accelerate science learning.

## Method

The study was confined to the lower primary school level in the "special setting" and the "IED school setting". The study was designed to seek information on the age group, the experience, the academic and professional qualifications of the teachers concerned, the number of disabled children in each class from Class III to Class V, the dropouts with reasons, the time allotted to and spent on science teaching. It next sought to explore the position of the availability and use of equipment/teaching aids/resource room facilities and the nature of science teaching. Suggestions from the various schools were also invited for improving the science education for the visually impaired children.

## Response

Judging from the number of returns, the response was limited. Questionnaires were sent to 189 IED setting schools and 407 special setting schools. The responses were received from 29 IED setting schools and special setting schools. The special setting schools in the States of Assam, Goa, Bihar, Himachal Pradesh, Karnataka, Jammu and Kashmir, Manipur and the Union Territory of Chandigarh and Pondicherry did not respond to the questionnaire. The IED schools in the States of Bihar, Himachal Pradesh, Karnataka and the Union Territory of Delhi also did not respond.

## Major Findings

The study resulted in the following findings:

(i) In the special setting schools the teachers are mostly well-qualified, trained and experienced, except in Uttar Pradesh where the teachers are untrained and with minimum qualifications. In the IED setting schools, most of the teachers are experienced and well-qualified, but they did not have special training for teaching disabled children, except in the two States of Kerala and Tamil Nadu where the teachers were trained also.

The teachers teaching in the IED setting schools are mostly male, young, and in the age-group 20-35 years. In the special setting schools, mostly the teachers are males and in the age-group 40-49 years.

(ii) On an average, the teachers in the special setting schools are teaching science for 40-45 minutes daily in each class for all the States. As compared to the other States, the time spent on science teaching in Kerala is 30 minutes.

In the case of the IED setting schools in Haryana, the time spent on science teaching is one hour daily whereas it is 35 minutes as far as Maharashtra and Rajasthan are concerned.

(iii) The situation regarding resource rooms, aids and equipment needed for science teaching is very bad.

The special setting schools of the following States do not have resource rooms and aids / equipment: Delhi, Haryana, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tripura and West Bengal. The IED schools in the States of Mizoram, Meghalaya and Rajasthan also lack resource rooms, aids and equipment.

(iv) The survey also indicates that there are dropouts from the special setting schools of the following States: Andhra Pradesh, Kerala, Maharashtra, Tamil Nadu, Tripura and West Bengal. The reasons are:

(a) Not properly trained in daily living skills.
(b) Over-protection of the parents.
(c) Home-sickness.
(d) Yield to childhood earning like begging, etc.
(e) Not properly motivated towards the benefits of education.
(f) Unwillingness to learn.
(g) Poor progress in the class.
(h) Poor IQ.
(i) Long absence from the classes.
(j) Parents unwilling to keep their wards in residential set-up.

For the IED setting schools of Haryana, Mizoram, Meghalaya and Orissa, the dropouts are due to the

following reasons:

(i) Unable to cope with normal students.

(ii) Advanced age and home-sickness.

(iii) Lack of boarding facilities.

## Teachers' Recommendations for Improving Science Teaching

### *(a) Special Setting Schools*

(i) Orientation, training and refresher courses for science teachers based on modern changes. Models, charts and simple equipment are necessary for science teaching.

(ii) Only interest and insight of the concerned teachers can improve science teaching.

(iii) The schools have to be provided with minimum science equipment. Embossed, unbreakable, safe teaching aids and resource rooms for science are a must.

(iv) Adaptation of equipment for disabled children at elementary level will improve science teaching.

(v) Field trips, practical experiment, direct methods, etc., will also help.

(vi) Good textbooks in braille are needed.

### *(b) IED Setting Schools*

(i) Orientation and training courses for science teachers are required.

(ii) Learning by doing should be practised.

(iii) Separate science kits for each topic, models, charts and simple equipment are necessary for science teaching.

(iv) Simplified explanation of the subject matter should be given in the textbooks.

(v) Power glasses should be provided by schools for partially sighted children.

On the basis of the findings, it can be concluded that the present status of science teaching in Indian schools for the visually impaired children is quite poor because of lack of specially trained teachers and suitable equipment and instructional material. It is quite clear that the most effective way for the visually impaired children to learn is that they do hands-on activities with real objects, organisms and suitable teaching aids under the guidance of properly trained teachers.

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