

Social Inclusion through Science Centre Activities in India

Arijit Dutta Choudhury

Since independence India has had an established policy and willingness to recognise and address different forms of social inequality and exclusion and has time to time used constitutional and legislative mechanisms to address them. In spite of established policies and efforts at different governmental levels and non-governmental forums, there continues to be large disparity between regions and social groups as well as physical, mental and gender inequalities. Empowering the socially excluded population in all spheres of activities is therefore essential for the overall development of the country.

In the context of non-formal education, science literacy is also as important as other forms of literacy. It is also a powerful tool for social inclusion. Science centres have relevance to all sections of the population and have become an important interface between science and society. Since these centres operate across geographical, economic, political, religious and cultural boundaries they impact the well-being, education, and skills of current and future generations. In this brief, an attempt has been made to examine the activities of science centres and museums aimed at bringing about social inclusion through special programmes, and especially by the National Council of Science Museums (NCSM) to bring in new facets of science and technology to fulfil the Council's mandate of popularising science and technology.

Some of the factors responsible for social exclusion in the context of visits to science centres and museums are the following:

- ☐ Geographical remoteness of residence with respect to the nearest science centre/museum
- ☐ Lack of education and associated enigma
- ☐ Physical, visual, hearing, speech and locomotor disabilities
- ☐ Stratification due to age, occupation and educational background, since most science centres and museums adopt "one size fits all" approach
- ☐ Economic constraints of an individual or family group.

For India to be globally competitive in the 21st century, a critical factor would be the ability to harness the knowledge potential of its people. With 550 million people below the age of 25, human capital is India's greatest asset. To best utilise this burgeoning potential the country needs a knowledge oriented paradigm and

focussed capacity and quality building in the field of education. In this context great emphasis needs to be focussed towards rural India, which has a large population base and a potential that can be realised only with a knowledge uplift of the rural populace. Realising the potential and importance of special programmes for the rural masses, NCSM had introduced mobile science exhibition buses nicknamed "museobuses" operating from Birla Industrial and Technological Museum, Kolkata. Over the years, these mobile exhibitions have spread all over the length and breadth of the country through a network of 26 science centres. This special programme for the less privileged rural masses with limited access to urban facilities has been in operation for over four decades. Continuous upgrade of this programme is expected to go a long way in empowering the excluded population with new knowledge that would ultimately contribute to nation building.

A recent addition to activities of NCSM with a similar objective is the collaboration with the local education authorities to bring rural underprivileged children to major science centres under the central government's *Sarva Shiksha Abhiyan*. Special package programmes have been devised by several science centres under the Council as an incentive to encourage visit. Through this scheme the state education departments have been sponsoring the visit of students to the nearest science centres. The process, which started a year back, has yielded very encouraging response and it is very heartening to see some state authorities even arranging local stay for one or two nights for students from far flung rural areas. The visits are made more fruitful by including visits to a number of educational institutions during one such trip.

In a similar vein, special interventions are necessary to ensure greater access to both formal and non-formal education of educationally deprived categories in urban conglomerations. A large section of urban children are deprived of primary education through formal systems due to financial constraints and pressure to earn livelihood for their dependent family members. These children, if not attended to with proper care during their formative years, are likely to become a burden to the society and therefore need special attention. While NGOs and voluntary organisations, with both governmental and philanthropic support, extend free education and other welfare measures, science centres can play an

important role as facilitators in this mission. NCSM in the recent past have initiated special programmes for these underprivileged urban children and strengthened these activities with focus on issues of current relevance that would be of mutual benefit for the science centres in fulfilling their mandate and also the society in growing with a more knowledgeable population. As a step in this direction, science centres under the Council have initiated special programmes for the economically underprivileged children of the city and adjoining areas in association with NGOs and other voluntary organisations. Guided visits to exhibitions, immersive experience, and special extension activities are being organised on a regular basis and a large number of disadvantaged children are now privileged to visit the science centres.



Fig. 1. Computer training programme for street children at Nehru Science Centre, Mumbai.



Fig. 2. Under privileged children at Science City with support from local voluntary organizations.

Similarly, the needs of the physically disadvantaged have to be factored in more thoroughly within the ambit of science centre activities. Being public places, the goal of all science centres and museums should be inclusive, which means that all infrastructures and facilities must be oriented to allow the greatest

possible access to people with different needs and abilities. While most science centre buildings under the Council have provisions for access and navigation for the visually impaired and the physically handicapped for majority of its facilities and instructive method implementation, a key factor for inclusiveness needs more attention from both exhibit designers and front end educators at the expositions. In a similar vein, educators have to be sensitised and empowered to deal with people with different abilities. Major steps in this direction have been the pioneering efforts of Regional Science Centre, Guwahati of putting up Braille labels at exhibits at the aromatic and medicinal plant corner and a novel exhibition titled "The World of Darkness" for the visually impaired at the Birla Industrial & Technological Museum, Kolkata. Both these facilities have received encouraging response from the users and shall motivate exhibit designers to consider this aspect in future projects as well as in existing installations wherever feasible.



Fig. 3. Blind students at Medical & Aromatic Plant Corner at Regional Science Centre, Guwahati.



Fig. 4. World of Darkness exhibition at Birla Industrial & Technological Museum, Kolkata.

Special short-duration programmes have been in practice at most science centres and more such attempts of permanent displays are the ultimate goal for inclusive growth. In this regard partnerships with special institutions catering to differently abled population that provide sustained and sympathetic support for learners with special needs and the severely disabled shall benefit both the science centres as well as end users.

Vocational training is an important element in building a knowledge society. Specialised training programmes for people of different educational attainments need to be devised for both rural and urban populace in order to be effective in the changing national context, and for India to enjoy the fruits of trained manpower. In the context of inclusive growth, it is crucial to develop new skills and technological literacy in order to promote employability among people with low incomes. Unless this is done, social exclusion processes would be further aggravated. It is equally necessary to recognise local requirements in competencies, to improve lifelong learning for all. The Council through its network of science centres has over the past two decades extended vocational training primarily at its District Science Centres for the community at large. Such programmes have not only benefitted the trainees in earning their livelihood but have also catered to the Government's inclusive policy to impart vocational training for people of different educational attainments. These programmes have been arranged through consultations with local industry groups and the advisory committees and are part of regular activity schedules of most district science centres. Efforts for appropriate accreditation and certification of the training programmes by appropriate authorities would further benefit the trainees, giving them an opportunity for absorption by the industry.

Stratification due to age, occupation, and educational background has been an important issue for social exclusion, especially in today's realm of new knowledge and changing technology. Science centres and museums are platforms where skills of current and future generations, cutting across geographical and social boundaries, can be suitably addressed for inclusive growth of all segments of society. In this context, with the advent of information technology and its associated benefits, National Council of

Science Museums in collaboration with Intel established in 1996 two state-of-the-art multimedia labs called 'Intel Cyberschools' in National Science Centre, Delhi and Nehru Science Centre, Mumbai.



Fig. 5. Computer Awareness Programme at Nehru Science Centre, Mumbai.

The labs initially gave school children and teachers easy access to Pentium-processor based multimedia computers, educational software and the Internet, which at that time had very limited penetration in homes across the country. The facility was very soon extended to senior citizens and homemakers and became a very successful activity at both these Cyberschools, reflecting the hunger for new knowledge, which had remained out of bounds due to their age, occupation and other social factors. While interacting with senior citizens and homemakers, the focus was to dispel the perceived fear from their minds from the initial stage of contact and to project a welcoming atmosphere. The interest of this segment was sustained by ensuring that the training was appropriately paced and was presented in an easily understood format void of jargons normally associated with the subject.

To conclude, professionals working in science centres and museums have to continuously evolve strategies, considering primarily local requirements to make their institutions more socially inclusive, widen access to their exhibitions and activities, and build in a manner that is conducive to pursue social inclusion as an important aspect in all developmental and educational activities.



Arijit Dutta Choudhury is Director, Science City, Kolkata.
adc235@gmail.com