

*Leading the Change...*  
**50 years of NCERT**



*Leading the Change...*  
**50 years of NCERT**

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी  
NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्  
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

## *Foreword*

The National Council of Educational Research and Training was established in 1961 in the backdrop of a school system struggling to disengage from its elitist colonial past and create a common programme of school education that was universally accessible and reflected the pluralist character of India. In this context, the Council set for itself an ambitious agenda of transforming the system in terms of policies, programmes and practices in schools and classrooms across the country. Over the years, the Council has grown in its scope exploring new areas and establishing new institutions across the country. The trajectory of the development of the Council has indeed been closely aligned with the development of the school education system in the country which continues to expand and undergo structural changes and reforms.

This commemorative volume captures glimpses of this momentous journey that the Council has undertaken over five decades. The NCERT's contributions have left an

imprint on a wide range of areas in school education starting from curriculum building to improving classroom teaching, preparing teachers and making schools and classrooms child-centred. The way ahead for the Council is even more challenging. While school education reforms will continue in the direction of providing quality education for all in an inclusive manner, the system has also to integrate new learning technologies that have the potential to radically transform our schools and classrooms. I am quite confident that the NCERT will rise to the occasion and confront the emerging challenges effectively.

This volume represents the collective effort of all Departments and constituent institutions of the NCERT. My sincere thanks to all of them. Let me record my special appreciation of the efforts of the Editorial Team and the Publication Department in bringing out this volume within a short period of time and in such an impressive manner.

R. GOVINDA  
*Director*

National Council of Educational  
Research and Training

*New Delhi*  
19 August 2011

# *List of Contributors*

The Council places on record its appreciation of the contribution made by the following faculty and staff members:

Ashok K. Srivastava  
A.K. Wazalwar  
Abhay Kumar  
Anil Lonare  
Anil Sethi  
Anjni Kaul  
Anubhuti Yadav  
Avtar Singh  
B.K. Tripathi  
D.K. Shende  
D.K. Vaid  
Daya Pant  
G.C. Upadhyay  
G.K. Joneja  
Gagan Gupta  
Gautam Ganguly  
Gouri Srivastava  
H.O. Gupta

Hukum Singh  
J.P. Bagchi  
Jaishree Sharma  
Jyotsna Tiwari  
K. Doraiswamy  
K.B. Rath  
K.B. Subramaniam  
K.C. Tripathi  
Kamlesh Rai  
Kiran Devendra  
Kirti Kapoor  
M.N. Bapat  
M.V. Srinivasan  
Moorttimatee Samantray  
Manju Jain  
Minoo Nandrajog  
Mona Yadav  
N.K. Ambashta

N.K. Gupta  
Neerja Shukla  
P.K. Mandal  
Pawan Kumar Barriar  
Pawan Sudhir  
Poonam Aggarwal  
R. Govinda  
R.C. Das  
R.K. Parashar  
R. Meghanathan  
R.S. Sindhu  
Rajaram S. Sharma  
Rajendra Joshi  
Ranjan Biswas  
Ranjana Arora  
Reeta Sharma  
S.C. Panda  
S.K. Yadav

Sandhya Singh  
Saroj Pandey  
Saroj Yadav  
Savita Sinha  
Sharad Sinha  
Shiv Kumar  
Shveta Uppal  
Sukhvinder  
Sushma Gulati  
Sushma Jairath  
V.P. Srivastava  
V.S. Mehrota  
Vasant D. Bhatt  
Vijayam Shankaranarayanan  
Y. Sreekanth  
Y.K. Gupta

## **Other Support**

Hina Chaturvedi  
Md. Iqbal Hassan  
Nitin Tanwar  
Sabyasachi Panja



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The Governing Body of the National Council of Educational Research and Training, in compliance with the provisions of Rule 71, has the honour to present to the Government of India and the Council the report on the activities of the Council for the period September 1 1961 to March 31, 1962 (from the date of the establishment of the Council to the close of the financial year).

K. L. Shrimali,	President
P. N. Kirpal,	Vice-President
D. S. Kothari,	Member
C. D. Deshmukh,	Member
V. K. N. Menon,	Member
M. M. Begg,	Member
P. C. Bhattacharyya,	Member
Raja Roy Singh,	Member
J. P. Naik,	Member
T. K. N. Menon,	Member
P. N. Natu,	Member-Secretary

New Delhi.  
January 5, 1963.

# 1

## The Council

### 1.1 Establishment

The National Council of Educational Research and Training was registered as a Society under the Registration of Societies Act (Act XXI of 1860) on June 6, 1961 and the establishment of the Council was announced by the Government of India, Ministry of Education, in its Resolution of July 27, 1961 (Appendix 1). It formally began its work on September 1, 1961.

### 1.2 Objectives

The main objectives of the Council are (a) to undertake, aid, promote and coordinate research in all branches of education; (b) to organise pre-service and in-service training mainly at an advanced level; (c) in collaboration with the State Governments and other authorities or agencies concerned, (i) to organise extension services for such institutions in the country as are engaged in educational research, training of teachers or provision of extension services to schools; (ii) generally to disseminate improved techniques and practices in educational institutions in the country; (iii) to undertake or organise studies, investigations and surveys relating to educational matters or the appraisal of educational programmes; (d) to establish and conduct a National Institute of Education at the Headquarters of the Government of India for the development of re-earch, advanced training (both pre-service and in-service) of educational administrators, teacher-educators and other high level personnel required for education, and the provision of extension services; and (c) to establish and conduct Regional Institutes in different parts of the country for the development of research, training and extension in general, and for the development of multipurpose secondary education in particular.

### 1.3 Organisation

#### 1.3.1 The Council and Its Principal Organs

The Council consist of the Union Minister of Education, Educational Adviser to the Government of India, Ministers of Education of States or their representatives, Chairman of the University Grants Commission,

# *Leading the Change*

The five decades of history of the National Council of Educational Research and Training (NCERT) mirrors, in more than one way, the change and development of school education in independent India. The setting up of the NCERT on 1 September 1961 as an apex national body to lead the change in school education was indeed a landmark event. The Council itself came into existence by merging seven institutions established in the initial decade after independence, namely, Central Institute of Education (1947), the Central Bureau of Textbook Research (1954), the Central Bureau of Educational and Vocational Guidance (1954), Directorate of Extension Programmes for Secondary Education (1958), which was initially established as the All India Council for Secondary Education in 1955, the National Institute of Basic Education (1956), the National Fundamental Education Centre (1956), and the National Institute of Audio-visual Education (1959). The amalgamation of these institutions was the first step in heralding a new national perspective on development of education in the country. It embodies an integrated and holistic view of education. Making school education a child-centred and child-friendly endeavour has been the main guiding principle for all activities at the NCERT.



# *Building a National System of Education*



*Building capacities in its people is perceived as a necessary investment towards national development. Developing a national system of education, therefore, has solicited the utmost attention. The NCERT was established with the agenda to design and support a common system of education, national in character, which at the same time would enable and encourage the expressions of the diverse culture across the country. The wide ranging participation of educationists, experts, teachers and educational administrators in defining the National Curriculum Framework has helped it emerge as a guiding force, drawing up the contours of schooling enabling teachers and developing academic structures to help realise the cherished goal of nation building.*



## TOWARDS A NATIONAL SYSTEM OF EDUCATION

Leadership in independent India viewed education as a critical factor in influencing all aspects of socio-economic development. In this effort, building a National System of Education was seen to be a central element and the NCERT became the lead institution contributing to its evolution.

With its vantage position as a national apex body, the Council has been able to capture a holistic view of the country's educational landscape enabling it to synthesise socio-economic concerns and regional diversities, analyse problems and issues and come up with alternate means of building a progressive system of education in the country. This goal of building a National System of Education and the Council's proximity to and



responsibility in policy making at the national level has guided all activities at the Council, be it research and development or training and extension.

Based on the recommendations of the Education Commission

(1964-66), the first national policy statement on education was issued in 1968. The policy endorsed the adoption of a uniform pattern of school education across the country consisting of 10 years of a general education programme followed by two years of diversified schooling. It reiterated the need for early fulfilment of the Constitutional directive to provide free and compulsory education for all children up to the age of 14 years.

The Council recognised that at the core of the national system of education was a sound curriculum, that was dynamic in character, periodically adapted to the changing needs and aspirations of the country. The series of curriculum reform exercises embarked upon by the Council has to be viewed in this perspective.

### Curriculum Framework for School Education

The Curriculum Frameworks are attempts at visualising a reorientation of the system to keep the educational effort in step with the changing times.

*The Curriculum for the Ten-year School: A Framework-1975*

This framework was the result of wide consultations involving educationists, experts, teachers and educational administrators.



It emphasised that a curriculum based on the principles laid out in the framework has to be developed on the basis of research. The NCERT also gave the lead in developing new syllabi and textbooks in a phased manner. The 1970s was a decade flush with curriculum research and development activities to relate the content and process of education to Indian realities.

*National Curriculum for Elementary and Secondary Education–1988*

Coming in the wake of the National Policy on Education (NPE) 1986, the revised curriculum framework encompassed 12 years of school education and focussed on five important aspects highlighted in NPE-1986, namely,

- National System of Education
- Education for Equality
- Universalisation of Elementary Education
- Secondary Education
- Vocationalisation at the Higher Secondary Stage

This framework suggested a reorientation of curricular and instructional materials to make them more child-centred. It strongly advocated bringing out examination reforms and

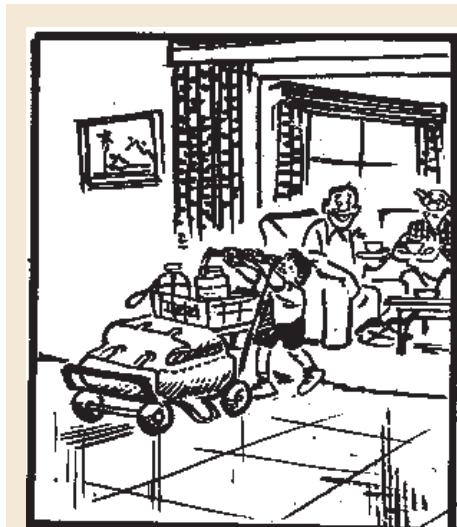
the implementation of Continuous and Comprehensive Evaluation (CCE) at all stages of education.

*National Curriculum Framework for School Education–2000*

At the turn of the century, the NCERT designed a framework that stressed the need for a healthy, enjoyable and stress-free childhood and reduction of the curricular load. An integrated and thematic approach was suggested, environmental education was emphasised upon, language and mathematics getting integrated in the first two years of schooling. The framework sought the participation of teachers in planning, implementation and evaluation of the curriculum.

*National Curriculum Framework–2005*

Keeping in view the fast-changing trends of the society and the need to meet the global standards of education, the Council came forward with a new National Curriculum Framework drafted by a National Steering Committee and supported by the recommendations of the twenty-one position papers. The exercise was based on five guiding principles, viz., connecting knowledge to life outside school, a shift from the rote method, enriching the curriculum for overall



Ah, my son is off to school!..... Luckily I managed to get one of these from the airport!  
(Courtesy: R.K. Laxman in *The Times of India*)

development of children so that it goes beyond textbooks, making examinations flexible and integrating them with classroom life and nurturing an identity informed by caring concerns. Arts and heritage crafts, health and physical education and peace were given a prominent place in the



curriculum enabling a child towards a vocation-based education. The role of the school ethos in predisposing the child towards the aims of education and success at school was highlighted. The framework laid emphasis on systemic reforms, like community participation, academic planning and leadership at the school level, as well as examination reforms and partnerships between school and civil society.

The national character of the NCERT provides a supportive structure for leading the change. The NCERT constituents, namely, the National Institute of Education,

Central Institute of Educational Technology, Pandit Sundarlal Sharma Central Institute of Vocational Education and the five Regional Institutes of Education with strong linkages with the States ensure the reach of education to all. The primary work of the NCERT, namely, research, development, training and extension have encompassed these issues from across the country. Specific needs of every segment of the society are responded to, every geography studied and every history represented. The various bodies that govern the policies and guide the programmes of the Council have representation from a wide variety of institutions both at the Centre and in the States. Consequently the activities of the Council acquire a national character aimed at realising the goals of the Constitution, at the same time accommodating the expectations of different States. The textbooks, support materials, training programmes, field studies and experiments are all designed to meet these diverse needs.



## The Logo

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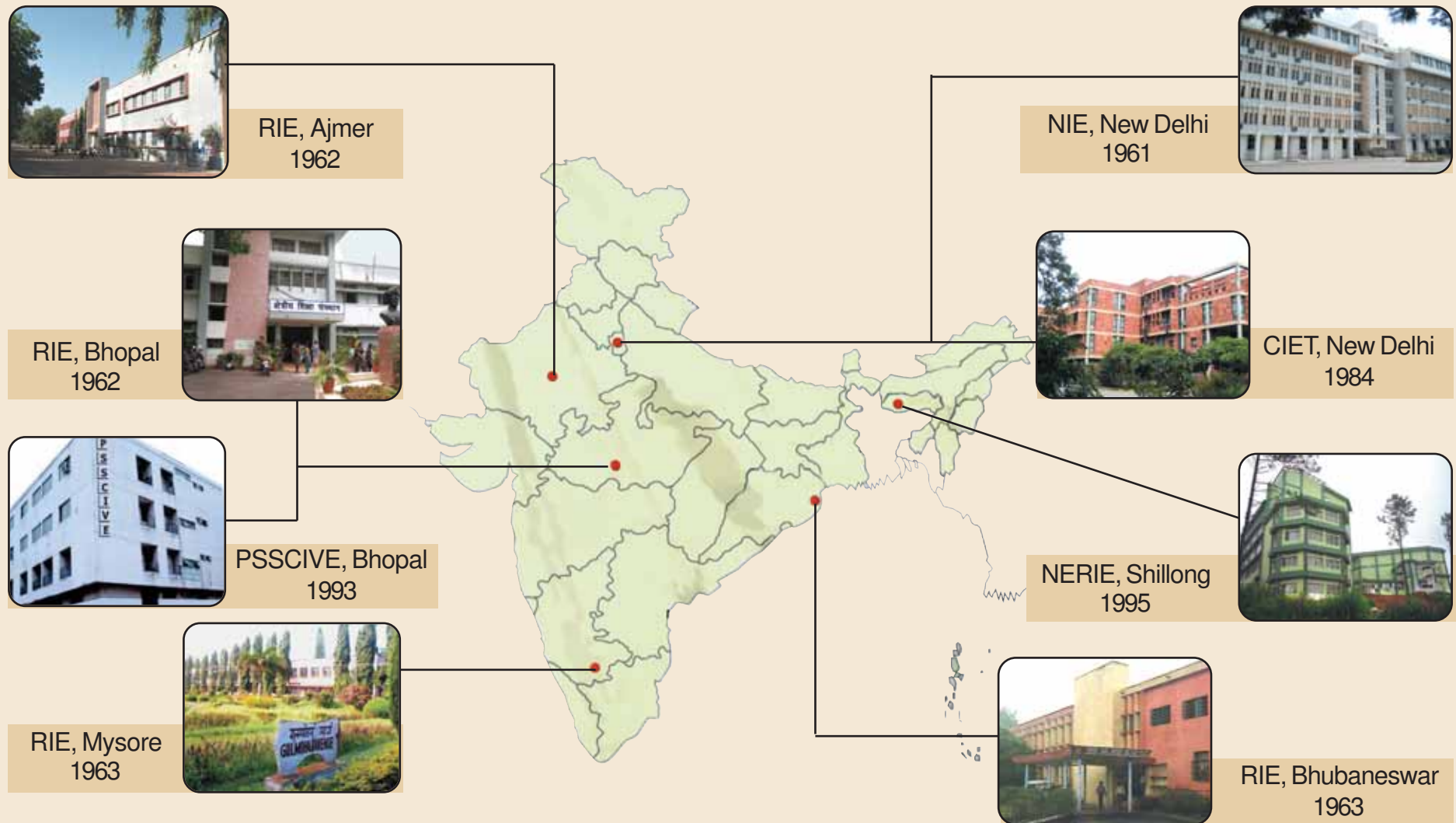
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NCERT

*The design has been adopted from an Ashokan Period relic of the third century BCE found in excavations near Maske in Raichur District, Karnataka. The motto has been taken from the Isavasya Upanishad and means 'life eternal through learning'. The intertwined hansas symbolise the integration of the three aspects of the work of the NCERT: (i) Research and Development, (ii) Training, and (iii) Extension.*

*The NCERT has expanded its operations over the years in response to the demands of society.*

*It began with the National Institute of Education and the four Regional Colleges of Education, spanning the area of school and teacher education. With a need to focus on strengthening education in the states, the colleges were renamed as the Regional Institutes of Education and their programmes expanded accordingly. Two institutions, the Central Institute of Educational Technology and the Pandit Sundarlal Sharma Central Institute of Vocational Education, were set up to explore the specialised areas of educational technology and vocational education. The fifth Regional Institute of Education was set up to specifically cater to the needs of the North-East.*

# Constituents of NCERT



Graphic representation only. Map not to Scale

# *Catching Them Young*

*In its early efforts in education, the nation had invested on secondary schools, gradually expanding it to cover a common 10+2+3 system for all. However, there was a growing understanding that unsuccessful completion of primary schooling was associated with an absence of a school readiness programme earlier. The need for capitalising on the immense potential very young children have for learning, also prompted a relook at pre-school education. Synergising it with the nutrition and health initiatives already underway, the NCERT was able to establish an Early Childhood Education programme in the country.*

*The initiative also showcased a system level reform, involving the establishment of structures, building of capacities, design, development and dissemination of material resources, sensitisation and training of stakeholders, research and evaluation. Realising this in a distributed system of many states working together was a learning experience, ensuring at the same time an early start and longer stay in school.*



## EARLY CHILDHOOD CARE AND EDUCATION

There was a growing recognition that the early years in a child's life are developmentally very significant. The need, therefore, was expressed to begin schooling early, taking due care that it does not become a downward extension of the primary stage.

Early Childhood Care and Education (ECCE), which focussed on play and activity, nutrition and health care, was designed to function as a school readiness programme.

Launched in the 1970s as the Early Childhood Education (ECE) project in twelve states with 65 ECE centres in each, it focussed initially on developing State-level expertise and on developing prototype materials for children and teachers.

In the process, the search for suitable materials for the 3 to 8-year-old showed up a general neglect of this age group in the production of well sequenced and stimulating

The Children's Enrichment Experiment through Radio (CHEER), in collaboration with the All India Radio and the Department of Women and Child Development, an extension of the radio feasibility programme 'Khilte Phool' was restarted for *anganwadi* children.

toys, games, books and audio-visual materials.

The Children's Media Laboratory was begun with the objective of discovering and developing inexpensive and effective media of both educational and

entertainment value. This initiative was very successful in establishing a lasting interest in informal methods of engaging children and catalysed a variety of similar initiatives in the states.

The ECE initiative was expanded with large scale trainings, adaption of the prototype materials in local languages, development of teacher support materials, and establishing ECE resource centres at the state and the district levels.

The project was also successful in modelling the work involved in initiating and establishing a new idea, multi-level multi-dimensional linkages with different institutions, promoting and supporting the activity in building capacities of teachers, parents, community leaders and educational administrators, development and dissemination of a variety of learning materials and documenting the

*To signify the International Year of the Child a National Toy-making Competition was held in 1979*



process. The model has since been developed into a six-month diploma course offered to teachers and teacher educators.

### RESEARCH STUDIES IN ECCE

- ECE and Retention of Children in Primary Grades—a Longitudinal Study
- Study of the Pre-school Education Component of ICDS and its Perception
- Utilisation by the Community (undertaken in ten States)
- Status of Pre-school Component in ICDS
- Perception of Parents towards Pre-school Education
- Status Study of Crèches in Delhi
- Evaluation of the ECCE Programme in Seven District Primary Education Programme (DPEP) States (Phase I).



The Children's Media Laboratory was established in 1977 to develop stimulating materials for children



*Little Steps*, an activity book for reading, writing and number readiness, 'Poorva Prathmik Shiksha—Ek Parichay', a booklet for teachers and parents; and a video programme entitled 'Khula Aasman' were produced.





## Promoting Reading with Meaning

‘A small books corner in the classroom, children freely accessing them, reading on their own, sharing stories with each other, the teacher actively participating, helping children when needed...’ How vital this is, particularly in the primary classes.

Development of language and literacy begins at birth, accelerating rapidly in the early years. As children’s vocabulary increases and they begin to use more complex sentences, their literacy skills emerge. An early investment in reading is known to lead to later success in academic achievement.



*Barkha Series*



At a systemic level, it has long been recognised that an investment in creating opportunities for reading influences enrolment and retention, creates an atmosphere of joy and encouragement, enhances confidence and a sense of achievement in teachers... yielding more dividends.

While repeated attempts to establish these ideas as a systemic necessity have been made over the years, for instance, Operation Blackboard, the scale at which primary schooling has expanded and newer primary teachers inducted, has continued to keep ahead of creation of adequate resources.

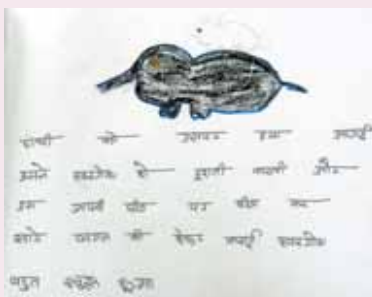
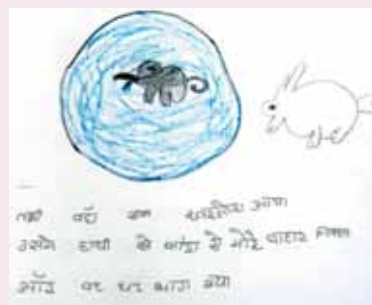
Begun a few years ago, the Mathura Project, run in about 560 schools, reaching 40,000 children, has succeeded in catching the imagination of teachers,

administrators and planners. The project uses a participatory process, involving teachers, researchers and experts in all aspects of the design. It aims to improve the teaching of reading and writing in the early primary classes, promotion of new pedagogies of reading and writing and supporting it with research, setting up libraries in the schools, training teachers, developing a series of graded reading books, documenting and repurposing available literature.



# हाथी और खरगोश

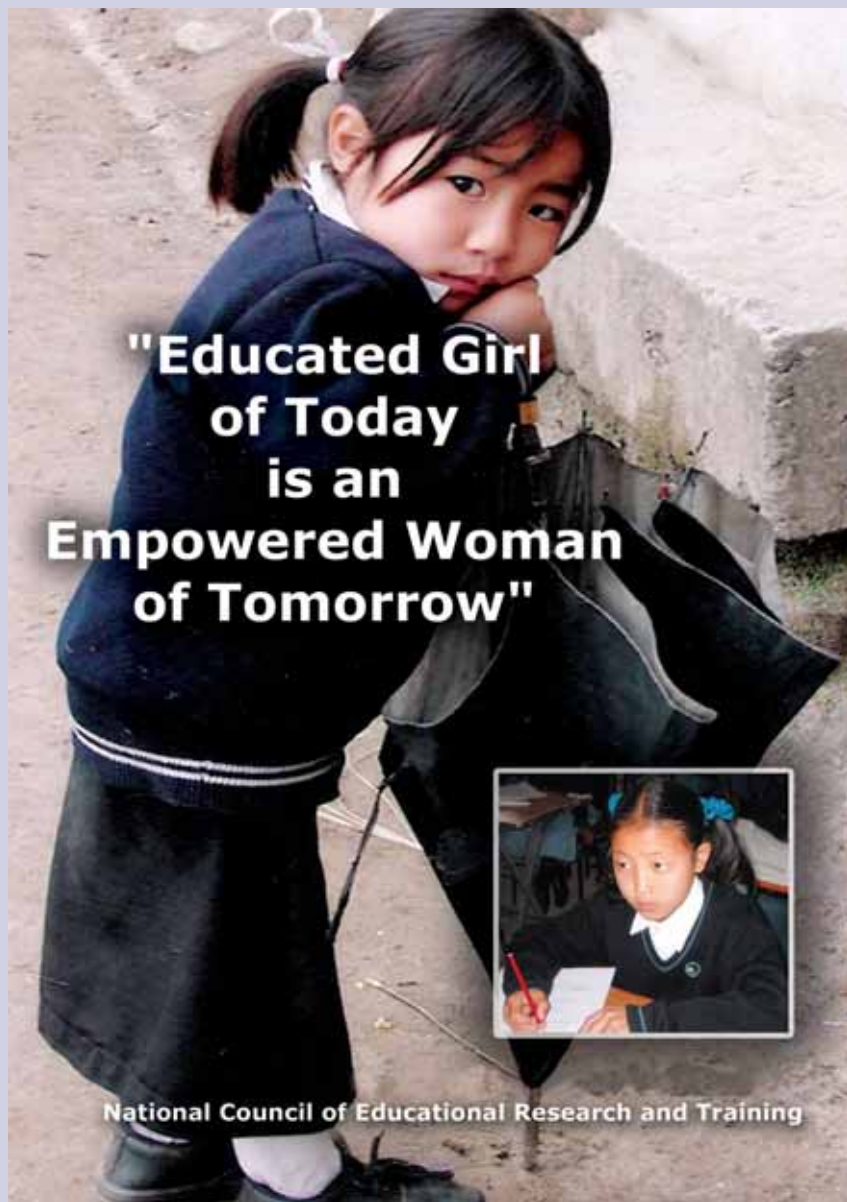
हेमा रानी  
कक्षा - 1



Evidence of early successes abound—enthusiastic participation of resource persons and teachers, innovative activities around the book corners and a large collection of books written by the children themselves.

The project has successfully advocated and helped establish similar initiatives in about 20 States and Union Territories across the country.





## *Equitable Space for All*

*Across the country, enormous strides towards establishing schools within the reach of every habitation have been made. Attempts to put larger number of children through schooling have proved to be successful. But, pockets of children still remain to be reached – children from the socially weaker sections, those belonging to the Scheduled Castes and Tribes, those belonging to minority groups, and particularly girls, in each of these groups. The need of the hour is to identify the extraordinary socio-cultural circumstances which restrict these children from accessing schools. The NCERT has undertaken studies and designed programmes not only to enable these children, but also to sensitise and train teachers, parents and the community. The Right to Education Act has strengthened the resolve and lent a supporting hand to the continuing efforts to bring schooling to every child.*

National Council of Educational Research and Training

## OVERCOMING SOCIAL BARRIERS

It is very interesting to visualise a functional, inclusive classroom with a heterogeneous group of students with different backgrounds, which is dynamic, interactive and engaged in a variety of activities. These students work together in the classroom and a healthy social relationship inside and outside the classroom strengthens togetherness and mutual respect.

Social inclusion has been in the forefront of the educational agenda. Apart from ensuring constitutional provisions, creation of a climate of acceptance is very important. Inclusion with appropriate resources, support, teacher preparation time, commitment, a vision and professional development of teachers will work even better.

The Education Commission's recommendations of a

### MONOGRAPHS

- *An Annotated Bibliography on Educational Development of the Scheduled Castes*
- *A Handbook of Information for Teachers on Educational Development of the Scheduled Castes*
- *Thoughts on Education – Quotations from the Works of Dr B.R. Ambedkar*

common school system and nationalisation of textbooks was a positive step in ensuring the interests of disadvantaged groups, particularly those belonging to the Scheduled Castes and Scheduled Tribes.

Field studies in Sociology of Education (1966–69) were among the early initiatives in the NCERT to map the ground situation and highlight issues related to the education of these

groups. Since then various research and evaluation projects have been undertaken to understand needs, evaluate impact of scholarships, study socio-economic mobility and the status of educational facilities. A study of institutionalised education among the Muria tribes of Bastar and the Ghotul were revealing.

While making special efforts to provide for the education of the tribes, a series of books under the title 'Meet Our Tribal People' were developed to sensitise other children to the life and culture of different tribal groups across the country.

An independent department of tribal education existed within the Ministry of Education for the education of tribal children before the Council was established. It continued its work, adding issues pertaining to the Scheduled Castes much later.



### BILINGUAL EDUCATION FOR TRIBAL CHILDREN

India is a land of many languages, many of them are dialects without even a script of their own. The challenges for children belonging to such linguistic minority groups in accessing and benefiting from education are great. The challenge of enabling them is even greater. This requires identifying expertise in the language, developing a sufficiently large vocabulary to cater to all areas of the curriculum, popularising its use, developing instructional material in these languages and training teachers to use them. The benefits of the exercise, however, are large enough to motivate the efforts.

Under the programme to prepare textbooks in tribal languages undertaken in collaboration with Central Institute of Indian Languages, Mysore, textbooks and primers in Gondi, Saora, Irula, Warli, Rathwa as well as books in five tribal languages of the then Bihar State, viz., Santhali, Mundari, Kurukh, Kharia and Ho, were developed. Simultaneously, development of supplementary reading materials in tribal dialects was also taken up with the view to make education interesting to retain children in schools as well as inculcate a sense of cultural pride and national integration among them. This material was based on folklores and life and culture of the concerned tribe.

### THE BHUMIADHAR PROJECT

Enabling children who have dropped out to rejoin school at a later date calls for a plan which would cover the academic gaps, motivate the children and help them overcome socio-economic barriers.

This project piloted in four distinct geographical regions—Bhumiadhar, a hilly area in Nainital, Barauli, a rural area in Aligarh, Bariarpur, a semi-urban area in Munger and Kilokri, an urban slum in Delhi—used a locally available craft or economic activity to create a non-formal, earn-while-you-learn interface, weaving an academic programme around the craft.

The project succeeded in catching the imagination of children, helping many of them rejoin school in an age-appropriate class.



## SIGNIFICANT RESEARCH STUDIES

- A Baseline Study of Tribals in Seven States, an Evaluation Study of Pre-matric Scholarship Scheme for SC/ST Students
- A Study of Inter-relationships between Education of Scheduled Tribes and their Socio-economic Mobility
- A Status Study of Educational Facilities and Occupational Needs of Higher Secondary Students belonging to SC, ST and Other Backward Communities in the Western Region
- Institutionalised Education among the Muria Tribes of Bastar, and the Ghotul and Its Dynamism.



## Education of the Minority Groups

For various sociological and economic reasons, many religious and linguistic groups remain deprived of the benefits of education and consequently of the opportunity to partake of the economic dividends which the nation has to offer.

Children from these backgrounds who are in mainstream schools need attention to overcome any deficit arising out of linguistic or cultural alienation. Teachers need sensitisation to their needs and support in designing and implementing a programme for this. Schools run by religious or social organisations, for instance, the *Madarsas*, require support in curriculum reform, facilities for teaching-learning, training of teachers, availability of books in different languages. Continuous engagement with these institutions, research into issues affecting their work,



development of textbooks and teacher support materials, vocational education, school guidance services and improving teaching standards in selected subject areas have been taken up. Within the minority groups are children with special needs, girls or extremely poor, who need support even to access educational facilities. Working with the community and motivating parents become essential.

The Council has undertaken many studies to understand the issues of minority groups which include analysis of existing curriculum in *Madarsas* and *Maktabas*; a study of educational institutions run by minorities, viz., Christians, Muslims, Sikhs and Buddhists; and study of girls education in *Madarsas*.



## Catering to Special Needs

The problems faced by children with disabilities in managing their lives are relatively well recognised. Problems faced by them in education require a deeper engagement. Disabilities are varied; their effects on the psycho-social make up of the child are even more so. Including them into normal schools requires the creation of an environment as well as a support structure, teachers sensitised to their needs and professionally equipped to handle them, textbooks and other instructional materials designed to be accessible to them, instructional programmes and activities suited to their capabilities; the canvas of inclusive education is large indeed.

The NCERT has been engaged with special needs education over many years and has contributed significantly to building an awareness and acceptance of the issue. The Council's activities and programmes have been two-fold. On the one hand, it has interacted with the states in promoting enrolment of children with special needs, their inclusion into normal schools, improving educational facilities, and developing mechanisms to deliver these services across the school system. On the other, it has made changes in the



curriculum, adapted instructional methods to their needs, and developed instructional materials for these children and their teachers.

#### VIDEO CASSETTES FOR PARENTS AND TEACHERS

- *Saath Saath*
- *Shuru Se Shuruwat*
- *Kram Ki Ore*
- *Samajh Ginne Ki Parts I and II*
- *Naach Man Mere*
- *Aap Ke Saath*
- *Chetan Ka Safar*



#### PROJECT INTEGRATED EDUCATION FOR DISABLED CHILDREN

This project was operational in six states during 1987 and 1993, for integrating children with disabilities in general education by bringing all children with disabilities, as far as possible, to general schools. It experimented with context-specific modalities focussed on providing equal educational opportunities to children with special needs. General teachers had to be helped by special teachers with the requisite competencies to deal with children with disabilities. The project led to various models of integration which have been tried successfully in different situations.

## EDUCATING THE GIRL CHILD

The Curriculum for the Ten-year School – a Framework proposed for the first time an undifferentiated, common curricula for all boys and girls. Looking back, it can be recognised as a fundamental shift in the perception of women in society, not merely as targets for a welfare policy but as critical actors in development.

Despite progressive policies, proactive actions over the years on various fronts and specific focus on the girl child in the District Primary Education Programme and the *Sarva Shiksha Abhiyan*, enrolment and retention of girls has lagged behind. This is particularly acute in the case of the disadvantaged social groups, with social practices and beliefs aggravating the issue.

The challenge before the NCERT, therefore, has been, on the one hand, to create awareness, advocate for the girl child, attempt attitudinal changes among parents, teachers and community leaders, and on the other undertake studies to survey the ground situation, evaluate progress, design interventions and train stakeholders.

An exhibition on “Re-presenting Indian Women 1875-1947: A Visual Documentary” in collaboration with the Centre for Women’s Development Studies was organised in each of the Regional Institutes of Education as well as the NCERT.

Efforts at sensitising the educational community have been at the forefront of the agenda. Redesigning of curricula to weave in issues of equity and equality, examine and rectify gender bias and gender stereotyping in textbooks, training teachers to become sensitive to gender disparities in the classroom and the school and equip them to promote girls have occupied attention.

A number of research studies focussing on factors impacting enrolment, retention and achievement in different parts of the country and different segments of society and social and professional conditions of teachers have been undertaken. Studies related to problem of

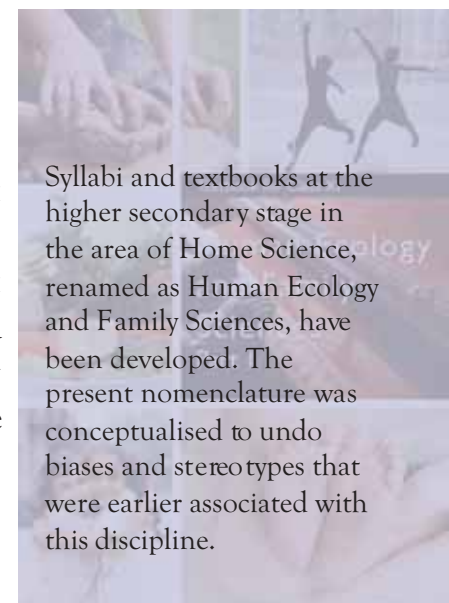


recruitment and posting of women teachers in rural areas at the elementary stage (1995–97) have been revealing. They have found that while efforts were being made to draw more women teachers into teaching at the elementary stage, the low and extremely poor outreach of rural girls to post primary stage hindered it. Most of the girls in those states were unable to complete 12 years of schooling which is the entry requirement for becoming a primary teacher. The Council has also undertaken evaluation of schemes of the government and studied their impact. These studies have significantly contributed to the knowledge base, helped in sensitising the system to issues that can continue to hinder efforts at universal participation of girls in education. The research has also been successful in reorienting policy and provisions.

Residential camps for girls who have not attended schools or have dropped out, in order to provide them a bridge course raising their knowledge and skills, have been successfully demonstrated as an alternative schooling option. The fact that older children can be fast tracked through primary schooling and allowed a

second chance to join mainstream schools at an age-appropriate stage, although not the best option, provides a window of opportunity towards stemming the drop out rate. The Kasturba Gandhi Balika Vidyalayas were established across the

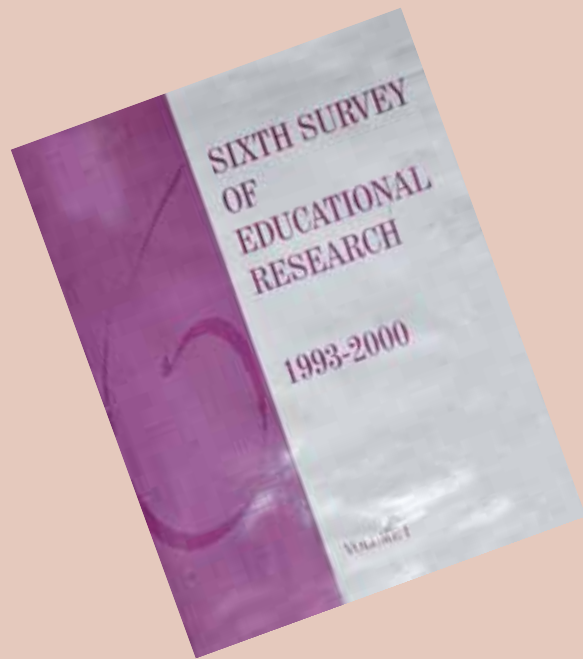
country on this model. The Council has been an active partner in the process, developing the bridge course and a customised teacher training package for these schools.



Syllabi and textbooks at the higher secondary stage in the area of Home Science, renamed as Human Ecology and Family Sciences, have been developed. The present nomenclature was conceptualised to undo biases and stereotypes that were earlier associated with this discipline.

The Ministry of Human Resource Development started the scheme of Kasturba Gandhi Balika Vidyalaya (KGBV) for the girls in rural areas, providing them free education and residential facilities in 2004.





## *Promoting Informed Choices*

*The National Council of Educational Research and Training was visualised to perform a pivotal function in informing policies and programmes, basing them on a sound academic footing, insights gleaned from studies on the ground and a systematised programme of introspection and debate.*

*The research programme at the NCERT, thus aims at creating and nurturing a culture of research into issues in education; creating and nurturing a pool of researchers; designing, undertaking, documenting, evaluating and publishing studies; and organising forums for discussion of the findings.*

*The areas of concern have encompassed a broad canvas, with a geographical spread spanning the entire country. Basic and applied research into all aspects of students, teachers, managers of the school system, teaching-learning processes, different subjects of the school curriculum and systemic issues, have helped create a reliable knowledge base.*



## EXPANDING THE KNOWLEDGE BASE

Education is an applied area, drawing its issues, problems and concerns from a wide variety of disciplines spanning psychology, sociology and other humanistic fields on the one hand, the subject areas that constitute the content, the organisation of the teaching-learning processes and the related technologies and management on the other.

Education in the Indian context is also largely a government intervention bringing in its wake organised activities of policy formulation, financial management, system design, development of curriculum and instructional materials, development and capacity enhancement of teachers, monitoring and evaluation. The scope of research is widened.

Educational managers are interested in issues of efficiency and productivity. Schools look up to research to understand the how and why of the curriculum, children, learning, instructional methods and materials, testing and evaluation. The expectations from research is vast indeed.

The Council in its very mandate was vested with an opportunity to establish research as the cornerstone of policy and practice in education.

### Research Projects – 1964

- Secondary schools in India
- Achievement motivation in high schools
- Scholastic aptitude test
- Evaluative criteria for inspection and supervision of secondary schools
- Wastage and stagnation in schools
- Achievement in mathematics
- Costs of education in India during the period 1951-61
- Identification of talent
- Curriculum and teaching of mathematics

The applied nature of education also provided an opportunity to bring together academics and practitioners from a wide variety of disciplines and interests. Again the national character of the organisation made it possible to establish linkages at multiple levels across the states, enriching the repertoire of problems

### RESEARCH JOURNALS



#### *Indian Educational Review*

A biannual refereed journal aims at enhancing the theory and practice of research in education. It also includes abstracts of ERIC funded researches and book reviews. First published in 1966, the journal also comes out with special issues devoted to specific themes.

#### *Indian Educational Abstracts*

Published since 1996, this biannual journal presents collections of abstracts of educational researches available in the public domain, carried out in India and abroad relevant to the Indian educational scene. This includes doctoral theses, research projects, published researches and books.



and solutions. A programme of funding and catalysing research has enabled the Council to co-opt a much larger fraternity of researchers in education.

Together, this has enabled the Council to identify, probe, study, evaluate a very large number of issues and generate a knowledge base that has informed programmes across the country.

The curriculum frameworks, syllabi at different stages, textbooks, laboratory kits, audio-visual materials have all benefited from the insights generated. Large scale teacher development, both at the pre-service and in-service, has also been enriched.



#### EXTENSION LECTURES

The NCERT organised a lecture series to mark its golden jubilee year. Eminent educationists shared their views on the future of education in India in the coming years.

The 'Thursday Lecture Forum' has been a platform for academic discussion involving scholars from university departments, educational thinkers and practitioners and the faculty members of the Council. 'The NCERT-India International Centre (IIC) Lecture Series' has also given the faculty members one more opportunity to widen their horizon by interacting with eminent speakers.

*Professor A.K. Sharma, former Director, NCERT speaking on 'Fifty Years of NCERT in the Context of School, Teacher and Society'*

#### DOCTORAL FELLOWSHIPS TO YOUNG RESEARCHERS

Under a programme to involve all the universities more actively in issues of school education, the Council awards the NCERT Doctoral Fellowships to researchers pursuing a Ph.D. degree since 2006.

Faculty members from the Council also function as specialist co-guides in this programme. Many faculty members of the Regional Institutes of Education are also registered as guides with different universities and guide students in their Ph.D. work.

## RESEARCH ACTIVITIES OVER THE YEARS

Apart from large scale projects of experimentation, evaluation or survey, undertaken usually at the instance of the Government of India or the states, smaller research projects are taken up by the faculty members. These studies or experiments are interdisciplinary, inter-departmental and involve field work spread across many states.

In the 1960s the Council was called upon to map the ground situation with a view to guide inputs into the school and teacher education system. Surveys were organised to evaluate preparation and use of audio-visual aids in community development training centres, assess the facilities of science teaching and audio-visual equipment in elementary and secondary teacher training colleges. The conduct of these surveys also helped build capacities within, in the design, plan and undertaking of surveys. This came in very handy when the Council was asked by the Planning Commission to undertake the Comprehensive Survey of Education. Since then the All India Educational Surveys have become an integral part of the Council's activities expanding in its scope to cover wider and wider aspects of education.

Developing an inquiring mind in order to develop capacities to reflect upon and solve problems is an essential attribute of a teacher. The Council launched a scheme to

encourage secondary school teachers to undertake small experiments. The scheme, in operation over many years, was very popular. A programme to train faculty from the District Institutes of Education and Training (DIET) in the process of action research has been in operation for over a decade now and has covered DIET of many states. Compilations of researches undertaken by students towards their doctoral degrees have been undertaken. The first such compilation was completed in the 1960s and covered all Indian universities from 1937 onwards. The surveys of research later institutionalised the activity. These surveys not only provide a ready access to the wide variety of research work in the country but also present a glimpse into range of issues and problems, enabling identification of gaps and design of interventions.

In 1984, ERIC began the publication of a research quarterly *Bulletin on Curriculum Research in India: A Retrospect and Prospect*. A subsequent bulletin abstracted researches in the area of curriculum research from the three Surveys of Research in Education and other sources, covering all researches completed in the Indian universities up to 1985. In 1985–86 ERIC decided to commission researches of national character in the priority areas so that these could be the basis for policy decisions in the context of the five-year plans. The strategy included identification of thrust areas through national seminars and listing problems and

## EDUCATIONAL RESEARCH AND INNOVATIONS COMMITTEE (ERIC)



The ERIC, a standing committee for research, extends financial assistance to University Education Departments, State Institutes of Education, Teacher Training Colleges and other institutions and individuals desirous of carrying out research in education through its scheme of Grant-in-Aid for research studies. Consisting of external and internal experts, it helps strengthen institutional capacities for research, disseminates research initiatives and findings and

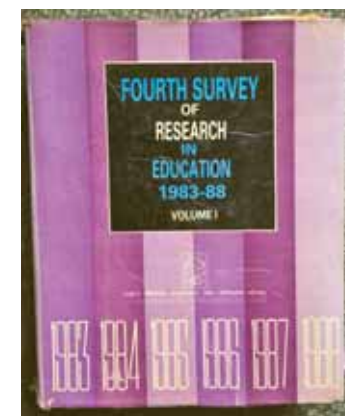
provides channels of communication to reach out to different categories of beneficiaries. Over 500 researches have been completed under its support.

issues; preparation of research designs by multidisciplinary teams; and identification of centres with requisite expertise and facilities.

The Council undertakes the organisation of various dissemination and sharing activities to promote an interest in research, infuse research findings into the school system and to influence policies. Many seminars and conferences at the regional, national and international levels have been organised.

## SURVEYS OF RESEARCH IN EDUCATION

While researches in the field of education were initiated by various Indian universities even before 1947, and the numbers grew manifold after Independence, other researchers found it difficult to access these. Professor M. B. Buch of the Maharaja Sayajirao University of Baroda initiated the project to collect abstracts of Ph.D. dissertations and published them. The *First Survey of Research in Education*, brought out in 1974, covered 15 broad areas of research up to the year 1972. The Second Survey conducted during 1972 to 1978 encompassed seven areas of education and was brought out in 1979. The Council took over the project and has published it ever since, growing in number of researches and range of areas covered. The *Sixth Survey of Educational Research* covers more than 2500 studies between 1993 and 2000. Practically, all sectors of education including pre-school, elementary, secondary, higher secondary, and teacher education have been examined. Historical, philosophical, psychological and other social and basic sciences' perspectives on teaching-learning issues and problems have been reflected in the reported studies.





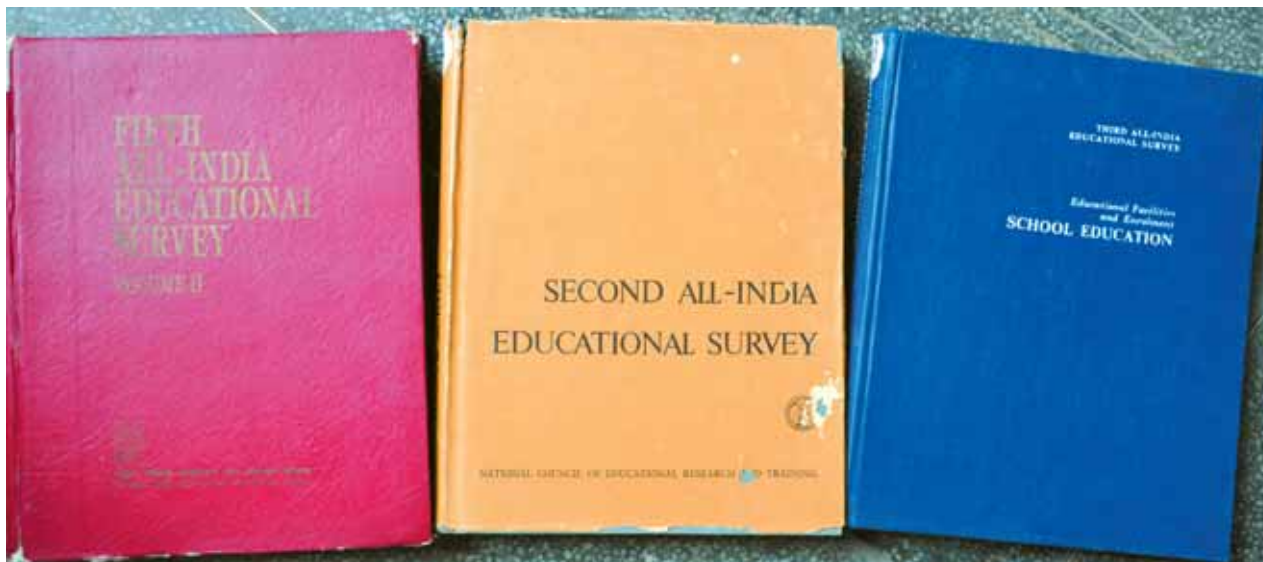
## DATA FOR DECISION-MAKING

The constitutional resolve to provide universal access to educational facilities places before the government a challenge to take informed decisions in educational planning and administration. The geographical expanse and the relative inaccessibility of many habitations throw up an added degree of complexity to the data collection exercise. Timely availability of a wide variety of information about the status of education is vital. And that is the challenge that the All India Educational Surveys have addressed, quite successfully over the years.

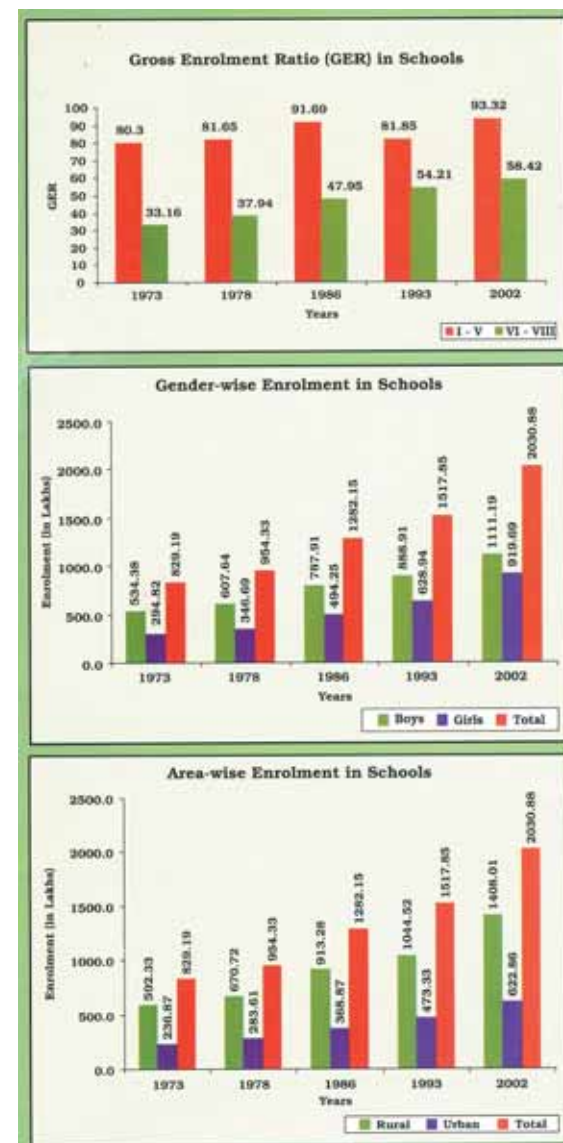
The process involves all the states, large number of personnel, and an enormous amount of data to sift from and make meaning of. The advent of technology-supported

data handling processes lends a hope for faster, more accurate and more reliable information flow, on which the different levels of educational administration can depend upon to make their decisions.

With the Eighth Survey, an initiative to incorporate online technologies supported by an appropriate geographical information system has also been taken. This initiative will not only decentralise the process of data collection, reduce the time and effort involved, but also make available to functionaries at different levels, timely and more accurate data to base their decisions on. The availability of raw and processed data online can also catalyse educational research activities across a wide variety of variables by larger cross-sections of researchers.



ALL INDIA EDUCATIONAL SURVEY (AIES)		
AIES	Date of reference	Main features
First	31.03.1957	Aimed to provide the basic information for planning of schooling facilities.
Second	31.03.1965	The need to provide baseline data required for planning the provision of educational facilities during the fourth Five Year Plan led to the second survey.
Third	31.12.1973	Studied intensively the existing facilities and other qualitative aspects of education in schools.
Fourth	30.09.1978	Included coverage of school-going population, the distance to be covered by a child to access school, enrolment of girls and children belonging to the weaker sections of the society and availability of basic facilities.
Fifth	30.09.1986	Conducted while the National Policy of Education was being formulated.
Sixth	30.09.1993	Made use of the benefits of IT by incorporating an electronic MIS.
ALL INDIA SCHOOL EDUCATION SURVEY (AISES)		
Seventh	30.09.2002	Aimed at meeting the data needed for special initiatives in the field of elementary and secondary education, collected through seven separate schedules. A Special School Information Form was used for the special schools meant for children with disabilities.
Eighth	30.09.2009	In progress



Data from the Seventh All India School Education Survey

## MAPPING THE QUALITY

Achievement of children in different scholastic areas is a significant indicator of the quality of the teaching-learning process. Noting this, various educational commissions have recommended periodic achievement surveys. The first such survey was conducted by the NCERT to study the level of learning of Mathematics of secondary students in 1970. This study was conducted in 20 states and significant inferences were drawn for teaching of Mathematics in schools at the primary, upper primary and secondary stages. A study of the achievement levels of children completing primary education particularly in Language and Mathematics was designed as a part of the efforts to meet the challenge of Universalisation of Primary Education. This survey undertaken during 1990–94 fed into the District Primary Education Programme, which was initiated in 40 districts and gradually covered over half the districts of the country spread over 18 states. Baseline, mid-term and terminal surveys were conducted for primary classes in Language and Mathematics.

In view of the benefits of such achievement surveys, the activity has been incorporated into the *Sarva Shiksha Abhiyan* (SSA). Classes III, V and the



terminal stage of upper primary were selected as the key stages for the study. Baseline and mid-term studies have been completed and the terminal assessment is underway.

### PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT

In an attempt to derive a comparative assessment of where our students stand against international benchmarks, a pilot study has been undertaken in Himachal Pradesh and Tamil Nadu. Students' achievement would be measured using the PISA 2009+.

## THE LIBRARY

The NCERT hosts one of the largest collection of books and journals on education. The libraries at the NIE, the RIE, the CIET and PSSCIVE are used extensively by researchers, teachers and scholars of education. The library also extends its services to a number of teachers, teacher-educators and students from different organisations and institutes.





# *Creating Benchmarks*

While the curricular frameworks perform the significant function of defining the school programme, instructional materials define the day-to-day transactions in the classroom. Together they perform the important role of setting benchmarks for the school system. Examinations function as milestones that the teaching-learning process aims for, allowing the system to assess itself and reset its course.

The NCERT's pioneering efforts at making available textbooks is well-known. Over the years, these books have been widely used, emulated and adapted. The unique participatory process of design and development of textbooks has also distinguished itself. Equally well-known is the scheme of National Talent Search and the National Science Exhibition, which showcase, in a way the products of the school system, giving them the motivation to perform even better.

The constant revision of textbooks, raising the bar and continued efforts to improve examinations are a move to enhance the benchmarks themselves. Programmes and activities are undertaken to monitor and evaluate the ground situation, define and design processes and work with the states to help achieve these benchmarks.

## THE MAKING OF TEXTBOOKS

Textbooks are generally known by single authors or perhaps a team of two. Whereas, our textbooks are a team effort. Keeping with the mandate of developing and publishing textbooks which would act as a model before the school system, the Council has evolved a unique participatory mechanism, which has stood the test of time. Each idea for a textbook begins with the recommendations of the Curriculum Framework, which in itself is the essence of a debate involving many minds and many different perspectives. This is followed by expert groups drawing up a syllabus outlining the content that goes into it. The syllabus by design spans complete stages of school education, ensuring continuity in thought and presentation, in sync with the psychological growth and development of children, and forming a complete course. This continuity is found not only across different classes, but also across different subjects.

Textbook committees are formed to articulate the content of the books. Many different models of collaborative work have emerged ensuring high

benchmarks in accuracy and presentation. While some groups have shared chapters to author, some others have shared the tasks of writing, developing graphics, collecting information, authenticating data, and editing. The teams not only consist of subject specialists but also psychologists, gender specialists, graphic designers, artists and professional copy editors, all to ensure that the child and the teacher for whom these books are meant remain in the centre.



The textbooks are then reviewed by independent teams of subject experts and practising teachers, their views and suggestions incorporated and the books sent for actual printing. Feedback continue to pour in and each reprint is in essence a new edition, improving the fare for the student. Electronic versions of the books are made available on the Council's website too.

Textbooks form the core representation of the aspirations articulated in the curriculum. These are supported by an array of other materials including supplementary readers, teachers' manuals and guides, laboratory kits, audio-visual support materials, problem and activity books, and training for the teacher. The participatory development process remains the same.

An experiment to develop online versions of these books is underway. This version would map a variety of support materials to the content, thereby providing a single window access to a wide range of teaching-learning resources including photographs, audio and video and evaluation support materials.

### THE PAGES THAT WE TURNED...

Something has changed, and it's not just the advent of social networking sites. Our life with books—the reading habit, the electronic media, the net surfing for information—all has changed. We have evolved into an entirely new generation of readers. Even the teaching tool, the textbook, has changed the world over. The textbook publishing industry in pre-Independence India was mainly dominated by the British. It took a good three decades after Independence for the publishing industry to raise its head indigenously, and the publishing effort of the NCERT has had much to contribute to this growth.

The education system was reforming its Education Policies in the mid-seventies and the eighties, leading to a gradual progress and encouragement of publishers. But the industry heavily depended on textbook-making and diversification into other print material, electronic offerings being a recent

phenomenon. The NCERT has established itself as a world-class organisation for school education, printing over thirty million books, sharing its copyright and facilitating reprint in over fifteen states, distributing content electronically and effectively reaching out to impact the quality of school education across the country. In February 1963 the Publication Division was set up with the aim of developing and printing model textbooks, modelling not only state-of-the-art content, but also the book.

The publishing programme of the NCERT is a part of its total efforts to improve the quality of school education, and its textbooks are used widely in schools affiliated to the Central Board of Secondary Education— Kendriya Vidyalayas, Jawahar Navodaya Vidyalayas, Tibetan Schools and several public schools.

To foster creativity and to establish itself as one of the renowned education authorities, the NCERT had to move up the value chain publishing non-textual children's books, Re 1 series, Reading to Learn series, Grammar books and selling more child-centric material. To meet the goal of reaching children in



every nook and corner of the country, in 1988–89 NCERT's Business Wing took the responsibility of distribution, till then handled by the Publication Division, Ministry of Information and Broadcasting. Starting with just three centres in Kolkata, Chennai, and Ahmedabad it took the bold decision of bringing in private wholesale agents for decentralised distribution. The Business Wing today has four Regional Production-cum-Distribution Centres at Bengaluru, Ahmedabad, Kolkata, and Guwahati and 350 wholesale agents in different regions of the country.

With the advent of Information Technology in the new millennium, the Publication Department revamped

### Copyright Permission



The NCERT, as a policy, has been offering copyright permission for adoption or adaptation, and translation of its books to Government agencies, Boards of Education and State Textbook Agencies.

its production capabilities—desktop publishing, graphic design, improved grammage of paper, online transmission and new attractive textbooks. However, they continue to be placed at a price point defined by a not-for-profit policy, enabling them to be within the reach of majority of children.



## EXAMINING EXAMINATIONS

The influence of examinations on the total schooling system has been growing exponentially and has come to a stage, where one would think, schooling is a preparation for an examination at the end. While the stranglehold of examinations is more pronounced today, their debilitating influence has always been felt. Not surprisingly therefore, way back in 1948, the University Education Commission led by Dr S. Radhakrishnan observed, “if we are asked to suggest one single reform in the Indian Education system it will be that of the examination system”.

Since the establishment of a Central Examination Unit in 1958, which was later merged into the Council,

The Council’s attention in the field of examinations, assessment and evaluation has been three-fold:

- improving the process of assessment and evaluation through research, development of tools and design of testing processes
- designing and establishing reform processes in the school system
- sensitising, training, and educating teachers in various aspects of evaluation

programmes have been initiated to make examinations valid, reliable, objective and meaningful. Framing good questions and question papers has been a constant endeavour. To achieve this end, training of paper setters, evolving marking schemes, analysis of question

papers and analysis of Board examination results have been conducted. The findings are shared regularly with the Boards to inform and to catalyse the process of reform.

The National Policy on Education, 1986, emphasised the need to see evaluation as an integral part of the teaching-learning process. It expressed a resolve to reduce the need to memorise and recommended the use of continuous comprehensive evaluation. It also expressed the resolve to introduce a grading system, semesterisation, and remove elements of chance and subjectivity in assessment.

Examination reforms, particularly when selection and rejection of candidates appear to be the predominant aim, are bound to be slow. Nevertheless, the Council has been, through sustained efforts with the states, able to help bring about many changes.

Efforts have also been made in improving the quality of question papers, better content coverage, increasing number and typology of questions with a focus on testing higher order thinking.



### EXAMINATION REFORMS

- introduction of the grading system
- promoting continuous and comprehensive evaluation
- transparency in evaluation procedures
- re-evaluation and re-totalling
- publishing of results on the web
- more number of repeat chances
- taking examinations in parts, and
- provision of extra time



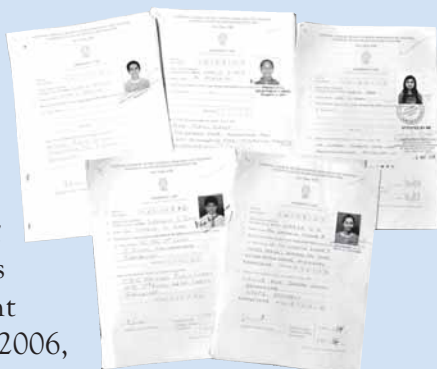
## A SEARCH FOR EXCELLENCE

### National Talent Search Scheme

Spotting and recognising talent can be a great motivator for sustaining young minds through the long haul of higher education. In a country of great economic disparities many capable students miss the chance due to their inability to afford education. Monetary support can be a great help to such students. Recognising the significance of such a support, the NCERT initiated the Science Talent Search Scheme in 1963.

In the first year the scheme was confined to the Union Territory of Delhi and 10 scholarships were awarded to Class XI students. The scheme was extended to all the States and Union Territories in 1964 with 350 scholarships. The scheme underwent a transformation in 1976 expanding it to include Social Sciences, Engineering and Medicine as well. It was renamed the National Talent Search Scheme (NTSS). Since 2006, the NTS examinations are held at the end of Class VIII and a thousand scholarships are awarded.

Presently, the Scheme covers areas like Sciences, Social Sciences, Engineering, Medicine, Management and Law. It honours and helps talented students by providing financial assistance in the form of a monthly scholarship. For the courses in Basic Sciences, Social Sciences and Commerce, this assistance is up to the Ph.D. level. For professional courses like Engineering, Medicine, Management and Law this assistance is given only up to Post Graduation.



## TEACHER INNOVATION AWARDS

Launched in 1962, 'Seminar Readings', encouraged teachers from all over the country to send brief reports of innovations successfully tried out by them. Every year, thirty primary and twenty secondary school teachers, besides a few teacher educators were honoured in a national seminar. The best papers were printed by the Council either as a book or in special journal issues.

The programme has become a regular feature of the Council's activities. However, its name was changed to 'All India Competition on Innovative Practices and Experiments in Education for School Teachers and Teacher Educators' under which every year 30 teacher educators and 70 school teachers were awarded annually for their innovations related to school education and teacher education.

Based on feedback received from teachers, teacher educators and experts this scheme was revised in 2007. The Council now awards schools and teacher education institutions for their innovations and experiments. Thirty awards in all, 20 for schools and 10 for teacher education institutions are awarded. Accordingly the award has been renamed 'All India Competition on Innovative Practices and Experiments in Education for Schools and Teachers Education Institutions'.

## OPERATION BLACKBOARD

The general absence of resources for teaching-learning has always plagued the education system at large. While a significant number of schools, particularly in cities and perhaps those privately managed have boasted of a range of facilities, a still larger number of schools suffer from a level of deprivation.

The plea for providing minimum facilities not only found favour in the National Policy on Education, but also led to the evolution of a scheme called 'Operation Blackboard' encompassing both physical and educational facilities. The Council in collaboration with the Bureau of Indian Standards led the development of a document

of specifications, kits and training programmes to orient teachers to the use of the facilities.

The range of items under the OB scheme included materials for teachers (syllabi, textbooks and teacher manuals), classroom teaching materials (wall maps, globe, educational charts), play materials and games equipment, a Primary Science kit, a Mathematics kit, and a Mini Tool kit, books for the library (reference books, children's books, magazines, journals and newspapers), musical instruments, classroom furniture and equipment including a school bell and a water storage facility.

The thrust provided in the scheme has had an impact in redefining the set of facilities in a school. Subsequent educational provisions under the DPEP and the SSA have not only ensured these facilities, but also used it as a stepping stone to go much beyond to make teaching learning a holistic, meaningful and joyful activity to the teacher and the taught.





## THE NATIONAL SCIENCE EXHIBITION

One of the highly popular programmes of the Council, the National Science Exhibition for Children is organised every year since 1971. The occasion provides an important forum for budding scientists – young school children with inquiring minds from different parts of the country to display their innovative ideas and perceptions in the form of low-cost exhibits and working models. It is a prestigious event for children to share the excitement of their innovations with others and enhance their learning. In 1988, the birth centenary year of Pandit Jawaharlal Nehru, the exhibition acquired its present name, the Jawaharlal Nehru National Science Exhibition for Children (JNNSEC).



To ensure meaningful participation of children at the national level and attract quality exhibits, state level exhibitions are organised a year in advance based on the announced main theme and sub-themes of the national exhibition. The exhibits are first screened at the district and state levels before they are sent to the national exhibition. Thus, the JNNSEC marks the culmination of various science exhibitions organised by the different states and school systems.



# *Setting Standards*

*Interpreting the curriculum, developing and trying out textbooks, teacher support materials, laboratory and activity materials, manuals and handbooks, audio-visual media, training methodologies, training manuals, etc., the NCERT has succeeded in setting standards for the nation's school system. The range and scope of this has been large and the impact immense. The significance of these activities are not due, so much to the quantity or variety, as to the specific problems they*

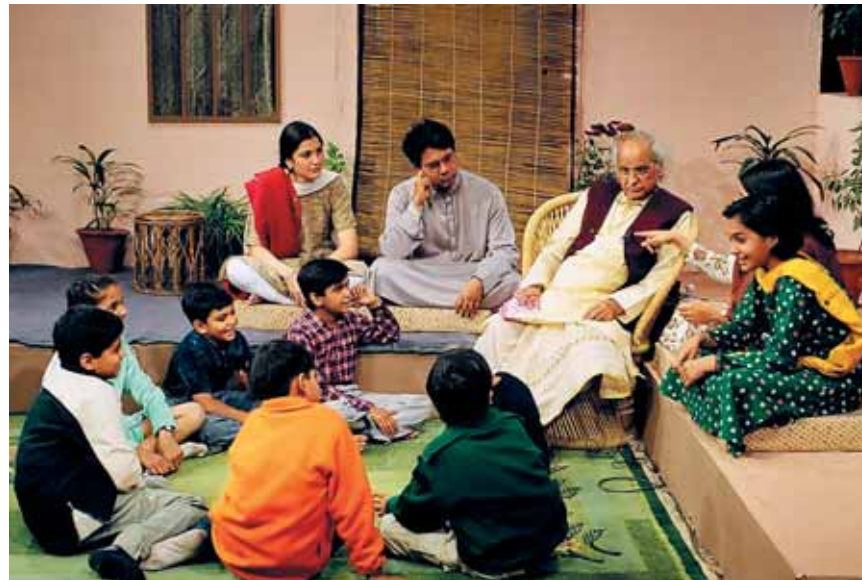
*have attempted to address and resolve. Many a time the effort has been pioneering, the solutions home-grown. The collaborative models adopted to design, develop, try-out and disseminate these products are also an effort at harnessing the collective wisdom and energies of the people, and in the process building capacities across the nation.*



## RIDING THE WAVE

The journey of our experiments with Educational Technology has been a long-standing and an exciting one, taking us through many epochs of the technology itself and many educational challenges. Two fundamental changes in technology, however, have had a definitive impact. One, no more is the making of audio-visual materials out of reach of the lay person. Two, dissemination of audio-visual material is also within everyone's reach.

The story began with the National Institute of Audio-Video Education, one of the seven institutions merged to form the NCERT. Journeying through 16mm films, film strips, 35mm slides to television and satellite technologies. The Council continues to support



educational programming on Doordarshan, Gyan Darshan and audio broadcasts on All India Radio and the FM stations of Gyan Vani.

The Council has built up an extensive library of audio and video programmes which are not only broadcast but also disseminated in the school system through CD and DVD. The collections span all stages of school education and all areas of the curriculum. Similar collections have also been built up in some of the regional languages by the Regional Institutes of Education.



With the launch of INSAT with transponders for television, a new dimension was given to customised communication through tele-conferencing.

## EDUSAT

India is perhaps one of the few countries that boast of an exclusive satellite for education. Launched in 2004, the satellite provides a host of educational services including television broadcast, video conferencing and learning management portals. The Council is one of major users of this network's national beams. Having established a nation wide network covering a host of national and State-level agencies in education. The EDUSAT network maps all the SCERTs, the Zonal Institutes of Education and Training of the Kendriya Vidyalaya Sangathan, the Leadership Institutes of the Navodaya Vidyalaya Samiti, the Constituents of NCERT, the State Institutes of Educational Technology and the Regional Centres of the National Institute of Open Schooling. One hundred centres can accommodate over five thousand trainees in each session. Various faculty members have experimented with this and use this medium to organise a variety of training and extension activities.



## COMPUTER LITERACY AND STUDIES AT SCHOOLS

Anticipating the significance of the computer revolution and recognising the need to introduce students to this technology, the Government of India launched the Computer Literacy and Studies at Schools project in July 1984. It aimed at introducing children and teachers to computers and help them explore its potential in teaching-learning. Initiated with 250 schools under the pilot phase it was expanded to about 2600 schools. The schools were linked with resource centres in different engineering colleges and IIT, the Regional Colleges of Education, Universities, and SCERT.

The Council played a pivotal role in the conceptualisation, implementation and evaluation of the project. Detailed curricula for both students and teachers integrating it with the regular school curricula were developed, training programmes were organised for over 6000 teachers, various instructional support materials developed for teachers and students. The Council was also involved in generation of application software and its dissemination. Since then infusion of computers and ICT in schools has grown exponentially.



## CLASSROOM 2000+

An experiment connecting classrooms across the country, Classroom 2000+ had a teaching end and remote classrooms were connected with a television receiver, talk back and a keypad for responding to questions through the pressing of a button. Students interacted with the remote teacher and the responses on the keypad enabled the teacher to immediately reorient teaching to meet the students' needs. The learning from this experiment proved significant for all future experiments with video conferencing.



## SATELLITE INSTRUCTIONAL TELEVISION EXPERIMENT (SITE)

The then Centre of Educational Technology of the NCERT took up the challenge of an experiment involving the in-service training of 48000 primary school teachers using multiple media inputs. Using the ATS-6 satellite lent to India for one year to beam its developmental television programmes, textual, pictorial and audio materials as well as films in four languages of the six SITE States (Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Orissa and Rajasthan) were designed.

The website of NCERT—[www.ncert.nic.in](http://www.ncert.nic.in)—hosts an e-library which contains all the textbooks published by the Council. Efforts are on to develop these into online textbooks, mapping a variety of online media and print resources to enrich the curriculum and provide a richer fare to the students and the teachers. The potential of the website is also being explored for supporting the Council's extension services. Online courses are being tried out.

## TELECONFERENCING



Teleconferencing was employed to support face-to-face interactions in the Programme of Massive Orientation of School Teachers and Special Orientation of School Teachers. The possibilities of scale afforded by this medium has made this an immensely popular form of distance learning and with the launch of EDUSAT, a permanent feature of the Council's teacher training efforts.

## SCIENCE AND MATHEMATICS EDUCATION

The curricular frameworks proposed by the NCERT have viewed science and mathematics as an integral part of the common school curriculum, perceiving it as a means to modern knowledge, fostering curiosity, teaching the scientific method of inquiry and a preparation for competent participation in a changing society. The learning of science, it is hoped, will help reduce obscurantism and prejudices, while the emphasis on a rational approach will help the development of a democratic, secular and socialist state.

The twelve-year curriculum begins with environmental studies at the primary stage, a general science curriculum up to Class X, and a differentiated discipline based study at the plus two stage. In mathematics, however, the subject remains a whole throughout. In order to cater to the interdisciplinary nature of science, the content is presented as units spiralling through the years.



First brought out in September, 1962, this quarterly journal aims at bringing within easy reach of teachers and students, the recent developments in science and mathematics and their teaching, and serves a useful forum for the exchange of readers' views and experiences in science and mathematics education and science projects.

The first set of instructional materials in science and mathematics were developed between 1964 and 1969, and implemented in the Central Schools. The materials included syllabi, textbooks, teachers' guides, work books, and laboratory equipments for the middle schools.

As a follow-up of the Conference of Scientists and Educators held in 1966, twenty study groups were set up in close association with the University Departments of Science for improving science teaching in schools. The study groups produced texts and other materials for the secondary stage.

A large number of in-service programmes are organised in content, methodology, design and use of instructional materials for teachers, teacher educators and other state functionaries.

A wide variety of instructional materials including textbooks, teacher manuals, laboratory manuals, audio, video and multimedia packages, have been developed and used extensively in the school system.





## Science and Mathematics Kits

Science kits were introduced in the school system for the first time during 1969-70. The kits are designed to ensure the availability of all the necessary apparatus and equipment at one place, keeping the unit portable and economising on the time required for setting up experiments. Much of the kit items can be used for more than one experiment and generally use low cost and indigenous resources, encouraging teacher innovation.

Three kinds of kits are popular, Demonstration Kits which include Upper Primary Science Kit and Secondary Science Kit; Laboratory Kits which include the Microscale Chemistry Laboratory Kits for the secondary as well as senior secondary level curriculum; and Take-Home Kits which include Solid State Model Kit and Molecular Model Kit. Science and Mathematics kits have been introduced across the country, at all stages of school education. A large number of training programmes for teachers have been organised for popularising the use of these kits.

Environmental Education has been one of the priority areas of concern in all curriculum development programmes. A fair amount of information about the environment is being given through textbooks and other materials developed by the Council to generate awareness about

- Upper Primary Science Kit and Secondary Science Kit
- Microscale Chemistry Laboratory Kits for the secondary and senior secondary level curriculum
- Take-Home Kits include Solid State Model Kit and Molecular Model Kit
- The Primary Science and Mathematics Kits
- Integrated Science Kit
- Mini Tool Kit
- Science Kits for senior secondary levels, Mathematics Kits for Upper Primary and Secondary levels
- Chemistry Kit for senior secondary level of the Open School system
- Molecular Kit at the senior secondary level
- Measurement Kit with an Electronic Thermometer, a Liquid Level Indicator and other similar equipment for the visually handicapped

the environmental concerns among learners. The methods suggested are an active interaction with the environment in order to develop a sensitivity towards issues, particularly manmade which adversely affects life on this planet.



## SOCIAL SCIENCES AND HUMANITIES EDUCATION

The Mudaliar Commission (1952) placed on the nation the onerous responsibility of devising a system of secondary education that would help in nurturing democratic citizenship in our children through the inculcation of values of discipline, cooperation, social sensitiveness and tolerance. This became an abiding principle with the system of secondary education. A forward looking social science curriculum became a potent instrument to open up young minds to new ideas, away from obscurantist practices and outmoded beliefs.

Thus, up to the secondary stage, social sciences forms an essential part of children's education in every Indian school with the objective to let them understand not only the social environment in which they live, but also to intelligently unravel how the various constituents of human society – the family, the community, the state, and the nation came into being and how they developed over centuries.

An integrated approach is followed at the primary and upper primary stages while History, Geography, Economics, and Civics are taught as separate subjects from the secondary stage onwards with the understanding that these will form the basis for



students' pursuit of specialised knowledge at later stages.

Model textbooks in all subject areas of social science were developed up to the higher secondary stage following the 1975 curriculum framework. Further, teachers' handbooks, in-service education manuals, teaching units and instructional objectives for various subjects including social sciences with pedagogical inputs and content enrichment material were developed. Guidelines were also developed to empower curriculum developers.

Following the adoption of the *National Policy on Education* in 1986 and the Curriculum Framework (1988), an emphasis was laid on promoting an understanding of the contemporary events and issues amongst children by way of leading them to go through newspapers and take up important assignments, project work, group activities and seminars. The clues to these activities were provided in the model textbooks themselves.

The issue of curricular load on children, however, remained both at the secondary and the higher secondary stages. Thus, the Curriculum Framework of 2000, sought to lessen the children's burden by firmly advocating an integrated approach to the teaching of social sciences both at the upper



primary and secondary stages. As a result, social science textbooks in single volumes were developed for all Classes from VI to X with themes drawn from history, geography, civics, economics and sociology in a judicious manner. A thorough integration of the core components of the NPE-1986 while pedagogically delineating these themes was also a distinguishing feature of these social science textbooks. A major study, 'Rational and Empirical Evaluation of Textbooks in Social Science and Languages' was taken up. And, through this exercise, all the recently developed textbooks from Classes VI to XII were analysed from the view point of their format, design, textual content, appropriateness of visual illustrations, comprehensibility, embedded values, exercises, activities, and other features. The study constructively contributed to the development of more innovative teaching-learning materials.

Deriving its objective from the values enshrined in the Constitution and contemporary concerns to strengthen unity and national identity in the country's multi-cultural context so as to enable the nation to face future challenges, the NCF-2005 particularly laid focus on the reduction of curricular load on children, connecting school curriculum with life outside the school, nurturing an over-riding identity within the democratic polity of the country and



to ensure that their learning shifts away from rote methods. Accordingly, it recognised social sciences to contain 'disciplinary markers' yet emphasised integration of disciplines through themes within each discipline. It recommended social sciences to be studied from the perspective of marginalised groups in such a manner that gender justice and sensitivity towards Scheduled Castes and Scheduled Tribes and minority sensibilities are addressed across all social science curricula. It also recommended recasting 'civics' into 'political science' and enable children to recognise the study of history to conceptualise the past. A new course on Human Rights is also being developed for the senior secondary stage, although, Human Rights education has always been a part of social science curriculum.

Business Studies and Accountancy curriculum at the higher secondary stage was formulated in 1988 and the first set of textbooks were brought out by NCERT which has been upgraded over the years by incorporating new concepts and emerging themes. Also, a new course on Computerised Accounting System has been designed by the Council recently to broaden the scope of commerce curriculum in general and accountancy in particular by integrating ICT to enhance the practical skills of commerce students.

## EDUCATION IN THE LANGUAGES

Work in language education in the NCERT has attempted to model view points on grading and structuring of language based on the needs of different age groups. The National Policy's view of a three-language formula across the country has also prompted work in conceptualising a scheme for the introduction of a second and a third language.

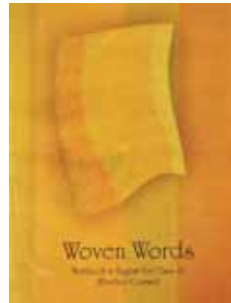
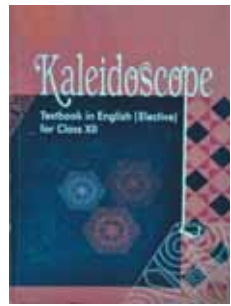
The instructional materials developed in the Council have been for Hindi, English, Urdu, and Sanskrit. The first project in 1961 led to the development of 'Teaching of Reading in Hindi', followed by textbooks for the secondary and senior secondary stage.

The 1966 effort at developing a book for the primary stage, *Rani Madan Amar* proved to be a landmark. A new method of reading Hindi, *Varna-Shabda-Vidhi* enabled children to read short stories even at Class II. These efforts have been widely adopted and the books emulated in many states.

English textbooks were developed in a phased manner in collaboration with the Central Institute of English and Foreign Languages. A nine-year course for those beginning at Class III and a six-year course for those beginning at Class VI were developed. The focus in these books were on establishing graded language items and on teaching language rather than content.

In order to cater to the students of Urdu medium, the development of Urdu textbooks began in 1983. Also, textbooks in Sanskrit for children from the upper primary stage to senior secondary stage have been developed based on a communicative approach.

Changing trends, mobility of people and increasing emphasis on English was taken note of and responded to in a series of textbooks developed following the NCF-2005.



उत्पत्ति  
Translation

of cultures. Here is an extract from a text originally written in Urdu. (Ask any of your friends who can read Urdu to read the passage aloud.) The writer, Ismat Chughtai, is widely read in many languages today.

جوتھی کا سوڑا  
آج کتنی اس بھری نگاہوں کی مارت کے منہ پر چہرہ کو تک وہی تھی۔ چہرہ  
عروض کی نول کہ دو پانچ تو جوڑ لہ گئے تھے۔ مگر ابھی سہلہ گری کا نشان بولتے تھے کسی  
کیو جسٹ نہ پڑتی تھی۔ گات جہالت کے معاملہ میں کہیں کی مارت کا مرنہ بہت تو تھا تھا۔ ان  
گئے سو گئے سو گئے ہاتھوں نے نہ جانے کتنے ہاتھ سوڑے تھے۔ کتنے ہاتھ چھک لہار گئے  
تھی لڑ کتب ہی کتب تھیں تھی۔

खौंसी का सोड़ा से ...  
जब दिल्ली में-वही दिनमें सुबह की थी वे मुसलमान खौंसी को एक लकी  
या छोटे अर्ध की लक के चं पर लो जोड़ दिए गए, पर अर्ध खौंसी सुदी  
का पिछा खौंसी की खौंसी को हिम्मत न पड़ती थी। कल-कल के बसने  
से सुबह की थी का सारा सारा खौंसी थे। उनके सुते-सुते खौंसी से न जाने  
दिलने खौंसी खौंसी से, दिलने खौंसी-सुबह खौंसी दिए थे और दिलने ही खौंसी  
खौंसी से।  
-इसम चघ्टाई  
That day many expectant eyes were riveted on the thoughtful face of  
Kubera's mother. The two short pieces of cloth had been strung together, but  
no one would dare to apply the scissors at this point. As far as cutting and  
measuring cloth was concerned, Kubera's mother's skill was undisputed.  
No one knew how many shawls she had prepared with her shrunken  
hands, how many suits she had stitched for new mothers and their babies,  
and how many shawls she had measured and ripped.  
-an extract from 'The Waiting Staff' by Ismat Chughtai  
(Translated from the Urdu by M. Anisuzzam)

Translation — Its Role and Relevance

Thanks to the vibrant linguistic plurality around us, most of us are at least bilingual. As a result we are actually natural translators, shifting easily from one language to another. We may dream in one language, converse in another and write in yet another language. But, indeed, with globalisation and the world shrinking, one or two languages may just become too daunting to allow others to survive. If we make concerted efforts to understand the different cultures/language groups, there may be hope for their survival through the respect accorded to each for its rich



NCF-2005 advocates language across the curriculum, and multilingualism. New syllabi and textbooks have been brought out on Creative Writing and Translation for the senior secondary stage.



For the promotion of Sanskrit, a project funded by MHRD titled 'Teaching of Sanskrit through Sanskrit' was initiated. Various activities including teaching learning material and a bridge course to teach Sanskrit in 21 days was brought out. A project 'Preparation of Source Book on Scientific Thoughts in Sanskrit Literature' was initiated.

## ARTS IN EDUCATION AND EDUCATION IN THE ARTS

Art is to be perceived with an all permeating attitude towards the performance of any and every activity, be it performing a daily chore or designing a structure, giving a speech, or writing a letter. Instilling an eye and an ear for an artistic bent of mind, which would beget an enjoyment of work and leisure is the goal.

The emergence of art education from a pass time activity for children to a subject of study and recognition of the need for a professional support system has been a long and an arduous one. Beginning in 1966 with the Saiyadain Committee's recommendation of introducing art education at all stages of schooling, the scope of the subject has grown, encompassing a variety of visual and performing arts and crafts.

Efforts by the NCERT to establish art education in the schools similarly has had a long history. The National Institute of Basic Education and the Department of Audio Visual Education led the movement in the early sixties through initiatives in paper craft, painting, theatre, puppetry, music and dance.

The evolution of the perspective of art education through the curriculum framework mirrors the general societal perception on art for children. The 1975



A resource centre for art and craft, set up in 1963 and called the Children's Art Club functioned till 1990, becoming a regular hub for children, also patronised and explored by parents.

framework focussed on developing an aesthetic attitude towards all work. The 1988 framework expanded the scope to include a wide variety of fine arts, both at the classical and folk level linking it to an appreciation of our national heritage.

The National Curriculum Framework, 2000 emphasised creative expression. Recognising the inadequate emphasis given to art education in the school routine, the NCF-2005 promoted it to an assessment based compulsory subject till Class X.



To achieve the goals of arts education the Department of Education in Arts and Aesthetics was created which plans to create a resource centre and conduct regular capacity-building programmes at different levels. After the recommendations of the NCF-2005, the department developed courses and textbooks on Heritage Crafts and Graphic Design for the Senior Secondary Level.



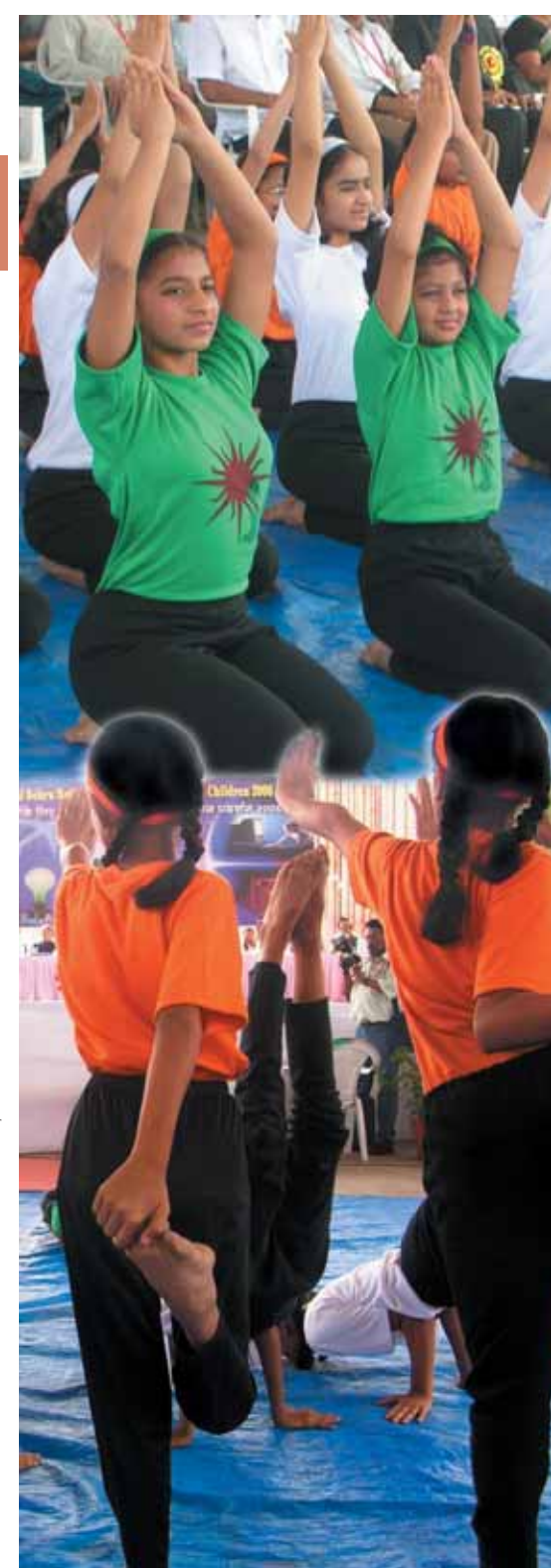
## HEALTH AND PHYSICAL EDUCATION

All the four curriculum frameworks have given due emphasis to Health and Physical Education. Syllabi from Classes I to XII have been developed based on the practical and experiential dimensions of children's lives. Also, a Source Book on Assessment of Health and Physical Education for primary classes has been developed.



### RECOMMENDATIONS OF CURRICULUM FRAMEWORKS

- Proper consideration to physical welfare and the maintenance of proper standards of health.
- The school programme should include developmental exercises, rhythmic activities, sports and games, outing activities and group activities.
- Replacement of mere physical training drill or formal activities with a broad-based programme of physical education, which would ensure participation of all students.
- Learners to develop desirable understanding, attitudes and practices with regard to nutrition, health and sanitation.
- Health and Physical Education renamed as Art of Healthy Living.
- It provides for a holistic definition of health within which physical education and yoga contribute to the physical, social, emotional and mental development of a child. It recognises health and physical education as a core subject, compulsory at primary and secondary stages and optional at the higher secondary stage.





## THE NATIONAL POPULATION EDUCATION PROJECT

The first attempt to conceptualise population education was made in the National Seminar on Population Education organised in 1969, which helped evolve a national consensus on introducing population education in schools. A syllabus was developed by the Council and attempts to integrate components into the regular school curriculum were initiated. The syllabus contained a scheme of content which drew contents from population growth, effects of population on economic and social development, health and nutrition, biological factors and family life, and ecological considerations. Launched in 1980, the National Population Education Project (NPEP) is being implemented in 30 States and Union Territories.

Concerted efforts have been made to integrate population education with the National Curriculum Framework and syllabi, textbooks, other instructional materials, pre-service teacher education courses and in-service teacher training programmes at all levels.



The project also organises a large number of competitions and other co-curricular activities aimed at sensitising children and teachers. Among others, the National Poster Contest has been organised every year between 1992 and 2002. A National Role Play Competition has also been organised since 2009.

Adolescence education, although a part of the NPEP, is dealt as a distinct programme. Recognising the conflicts adolescents face in their acceptance of physical, socio-cultural and psychological developments in them, the Adolescence Education Programme is designed to help children of this age group to cope and adapt to themselves and the world around them, maintain their health and protect themselves.



## FOR HAND AND HEART

Vocationalisation of education refers to efforts by schools to include in their curriculum those practical subjects or courses likely to generate among the students some basic knowledge, skills and disposition that might prepare them to 'think' of becoming skilled workers or take up other manual occupations. In the Indian context, it has been understood as having two aspects: (i) provision for the development of vocational skills and knowledge alongside general education throughout the school system of ten years, and (ii) offering Vocational Education Programme as an alternative to general education at the higher secondary stage of two years.

Organisationally, the efforts began with the setting up of the Work Experience Cell in 1973, which was rechristened as Work Experience and Vocationalisation of Education Unit in 1975. This unit was bifurcated into the Socially Useful Productive Work Unit and the Vocationalisation of Education Unit. In 1984, the Council set up the Department of Vocationalisation of Education which went on to become the Pandit Sundarlal Sharma Central Institute of Vocational Education in 1993. The PSSCIVE provides intensive technical and academic support to formal and non-formal vocational education in the country.



The vocational curricula developed by PSSCIVE are adopted or adapted by the States/UTs and the instructional materials are used by teachers and students.

- The curricula and instructional materials for the Generic Vocational Course were developed during 1994-95 with the objective of imparting generic competencies to students of the general academic stream at the +2 level.
- This has been introduced in about 100 schools affiliated to the CBSE.
- The Institute provides consultancy services to the States/UTs in implementing and promoting vocationalisation of education and VEP at the +2 level.
- It has also worked with various national-level organisations for development of materials and promotion of VEP.

The institute is also one of the Centres of UNESCO's International Project on Technical and Vocational Education and hosts a National Centre for Vocational Education Information, which promotes national, regional and international networks of information services on VET.

The NCERT has published 32 textbooks and 73 practical manuals for a variety of vocational courses. A quarterly *Bulletin on Vocational Education* and the *Indian Journal of Vocational Education* for wider dissemination of news, success stories, research papers and articles on vocational education are also published.



## NATIONAL VOCATIONAL EDUCATION QUALIFICATION FRAMEWORK

"Vocational education was planned in isolation of the rapidly changing economic and technological scenario, lacking in-built design for responding appropriately to the emerging challenges with 'flexibility and creativity'..." (NCF-2005, *National Focus Group Paper on Work Education*).

The proposed 'National Vocational Education Qualifications Framework' provides the much-needed transferability and equivalence between different streams of education. It is a descriptive framework that organises qualifications according to a series of levels of knowledge and skills and set common principles and guidelines for a nationally recognised qualification system covering schools, vocational education and training institutions, technical education institutions, and universities and colleges. It will enable people to become lifelong learners. The Council proposes to develop a 'unified curriculum framework' based on modules (units) and credits which would enable multiple entry and exit and progression of students within the NVEQF.



# Supporting the System



Developing a cadre of teachers, and enabling their lifelong professional development is one of the core activities of the NCERT. Over the years the various departments of the Council have identified and responded to a large range of concerns of teachers, their disciplines, methodology, pedagogy and issues of children in the classroom context. The departments have also responded to the needs of the larger support system in the states, particularly in building capacities of resource persons.



With the advent of the District Primary Education Programme, which was succeeded by the SSA, a network of institutions at the cluster, block and district levels have been created. Primarily functioning as teacher resource centres, they also undertake continuous teacher support. Developing their capacities further is also essential.

## CATALYSING REFORMS IN TEACHER EDUCATION

Changes in societal perceptions, cultural mores, technological advances, developments in various disciplines, newer insights into human life, growth and development influence our insights into what our children should be educated in and how that should be done. These changes have shown an explosive growth in recent times, challenging our capacities to keep pace with and respond to them. Continuous teacher professional development becomes a necessity to help the teacher community remain effective.

The NCERT has been associated with setting up the structures, defining the scope and helping the states implement a dynamic programme of in-service teacher education. Setting up of the State Institutes of Education and the State Institutes of Science Education across the country was an early initiative at catalysing capacities. Later the Council spearheaded the initiative of promoting and establishing the State Councils of Educational Research and Training (SCERTs). Their functions are analogous to the NCERT. Since then, annual conferences of the Directors of SIEs and SCERTs are organised to discuss emerging issues and concerns in education and major policy thrusts, share achievements and strengthen linkages.

The Conferences seed a variety of programmes and activities of the Council.

The National Policy on Education (1986) recommended a restructuring of teacher education institutions—upgradation of some colleges of teacher education into Institutes of Advanced Studies in Education and the formation of District Institutes of Education and Training with a range of functions including pre-service and in-service teacher education. The Council was intensely involved in the design of these institutions and continues to build capacities in them.

### Curriculum Development in Teacher Education

The conceptualising, establishing and nurturing of an indigenous teacher education programme is one of the most significant contributions of the Council. The first Curriculum Framework for Teacher Education was brought out in 1978 by the National Council of Teacher Education. In its non-statutory form, the NCTE was located in the Council. The framework was widely implemented in the country. A revised framework in 1988 following the National Policy on Education (1986) and the 1988 Curriculum Framework led to the development of guidelines and syllabus for the teacher education programme at both the elementary and

secondary stage. The guidelines were discussed at various levels with the States and experts and released in 1991. The latest revision of the National Curriculum Framework for Teacher Education, 2009 has seen significant inputs from the recommendations of the Focus Group on Teacher Education and the National Curriculum Framework, 2005.

### Preparing Teachers

The Regional Colleges of Education, now known as the Regional Institutes of Education, were established among other things to run innovative pre-service teacher education programmes on an experimental basis. The experiments were in response to changes in curricular perspectives, systemic changes or societal needs. For instance, the colleges were called upon to respond to their first challenge almost immediately after their inception.



The situation was the acute shortage of trained teachers at the elementary, secondary and senior secondary levels. The response was unique and novel for its time—a B.Ed. Summer School-cum-Correspondence Course, which was run over two summers as a face-to-face programme while the intervening period was in distance mode.

The +2 stage of schooling is a specialised stage too. Dealing with adolescents require a pedagogical preparation which again is distinct. Recognising this need, the colleges organised integrated two year M.Sc.Ed., programmes. While the college at Mysore offered these integrated post graduate programmes in Mathematics, Physics and Chemistry, the college at Bhubaneswar offered it in Life Sciences.

The colleges gave the nation the first four-year integrated pre-service teacher education programmes. These included innovative courses in Science (BSc.Ed.), Arts (BA Ed.) Commerce (BCom. Ed.) and Technology (BTech.Ed.), to meet the needs of the secondary school system. The innovation itself was a recognition that an integration of content and pedagogy helps develop effective teachers.



Similar experiments have been designed to demonstrate more effective transactional methods. A two-year B.Ed. programme to extend and strengthen the professional skills component and a masters programme in elementary education to cater to the needs of DIET are examples.

The students of these courses benefit not only from a tightly integrated course, but also from faculties in various disciplines like the sciences, social sciences and humanities, whose long standing association with education and the state school system, gives them a unique edge. The professional competence, commitment and concern for education of the masses exhibited by large numbers of teachers produced by these courses over the years is testimony to the success of the model. Of course, some of these courses outgrow the initial requirement and have to be replaced. But that is what an experiment is all about.

## Demonstrating a Path to Holistic Development

In the very design of the Regional Colleges of Education was defined, a need to demonstrate what the teacher preparation courses in the colleges would expound. The Demonstration Multipurpose Schools were set up alongside the colleges to serve this very purpose.

The schools have ever since functioned as a test bench for various ideas and formulations in education. Almost every new reform proposed by the Council is tried out in these schools. Students of the RIEs including researchers use the schools as a laboratory. State teams visit the schools to study specific reforms.

The curriculum and its transaction is where the schools distinguish themselves. Not only is every student exposed to a multipurpose education including an exposure to agriculture, carpentry and woodwork, machine tools, home science, arts and crafts, games and sports, computers and technology, music and dance, but the transaction of



other conventional subjects also integrates practical self-directed work. The general ambience is that of freedom to the teacher and the student, fostering enhanced self assurance, a progressive, democratic and secular outlook.

The Demonstration Multipurpose Schools function as a bench mark for other schools to emulate. Teachers from the schools are an integral part of a range of developmental, research and extension activities organised by the Council and function as resource persons in a variety of training programmes for other teachers.

### Learning Lifelong

Programmes of in-service support to teachers aimed at updating their knowledge of the subjects they teach, continuous assessment, remedial teaching, use of appropriate technologies in the process of teaching and learning, etc., are the mainstay of extension services in the Council. Programmes are also organised to equip them with relevant skills to enable them to analyse the curriculum; plan, organise, manage and evaluate their classes; and to sensitise them to social issues like caste, gender, democracy, psychological needs of children, and the need for continuous professional development of teachers.

Such programmes take the form of regular training programmes, which include hands on work, for instance in Science and Mathematics, Geography, Educational Technology and ICT; development and dissemination of



support materials like textbooks, supplementary readings, teachers guides, laboratory kits, activity books, projected aids, audio and video programmes and of late electronic-multi-media CD or the web. Every department of the Council takes up teacher development activities, which together span the entire range of needs of teachers at all stages of schooling.

Every new policy reform and every revision of the curriculum framework introduces a fresh set of issues, methodological and pedagogical concerns which are then taken up through teacher development activities. While the Council takes advantage of its regional presence to simultaneously launch such activities across the country, it has also tried out technological means for scaling up



teacher support activities. Teleconferencing was used in conjunction to face to face interactions to reach larger numbers in the programmes of mass orientation of teachers towards the National Policy of Education (1986). Following the revision of textbooks on the basis of the NCF-2005 the EDUSAT network was used to reach out to teachers and orient them to the concerns articulated in the framework as well as the methodological and pedagogical orientation of the new generation of textbooks. Special programmes oriented to the needs of specific regions have also been organised.



### PMOST AND SOPT

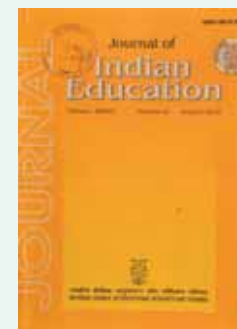
Known as the Programme of Mass Orientation of School Teachers (PMOST) and aimed at orienting teachers on the thrust areas of NPE-1986, especially child centred and activity-based teaching-learning processes, this programme covered 17.62 lakh teachers over five years. The training materials in modular form and suggested training strategies were developed for the 10-day orientation camps organised in various places in various languages. These were supported by a series of telecasts.

The programme was extended in 1990 to orient the primary school teachers, specifically to the use of material supplied under the Operation Blackboard (OB) Scheme, implementing the Minimum Levels of Learning (MLL) identified for primary stage and generally improving teaching-learning strategies. A self instructional package consisting of 16 modules on different contextual themes and curricular areas supported by a video package, specific to primary stage was used. Taking note of the size of the target population the programme was initiated under a new scheme called Special Orientation of Primary Teachers (SOPT) from 1993-94. Up to March 2003, 23.55 lakh primary school teachers were trained under this programme. A number of evaluative studies have been undertaken to evaluate the effectiveness of SOPT programme.

### *JOURNAL OF INDIAN EDUCATION AND BHARATIYA ADHUNIK SHIKSHA*

Published every quarter in English and Hindi, these journals aim to provide a forum for teachers, teacher educators, educational administrators and research workers to encourage original and critical thinking in education, presentations of novel ideas, critical appraisal of contemporary problems and experiences of improved practices.

The contents include thought provoking articles by distinguished educationists, challenging discussions, analysis of educational issues and problems and book reviews.



## LEARNING FROM OTHERS

India offers a unique challenge for the educationists. While social, economic and human issues are likely to be similar, the sheer scale at which each of our programmes and activities are expected to operate pose a great challenge. The need to cater to a wide range of diversities in every aspect of the educational enterprise calls for home-grown solutions. Learning from others—their experiments, successes and failures do provide opportunities for figuring out several pieces of the puzzle.

In the initial years, when institutional building was the focus, international agencies and institutions from the developed world were actively involved in designing programmes and capacity building. The Regional Colleges of Education and the Demonstration Multipurpose Schools are examples of this technical cooperation.



The Council has benefited from a strong international support to its initiatives, right from its inception. UNESCO, UNICEF, Colombo Plan, Ford Foundation and USAID have actively helped in development of science education, development of educational research, particularly curriculum research, psychometrics, extension services, examination reforms and audio-visual education, and the organisation of Summer Science Institutes. Various other international agencies including the UNDP, the British Council, Governments of UK, erstwhile USSR, and erstwhile GDR have been closely associated with specific programmes initiated and supported by the Council.

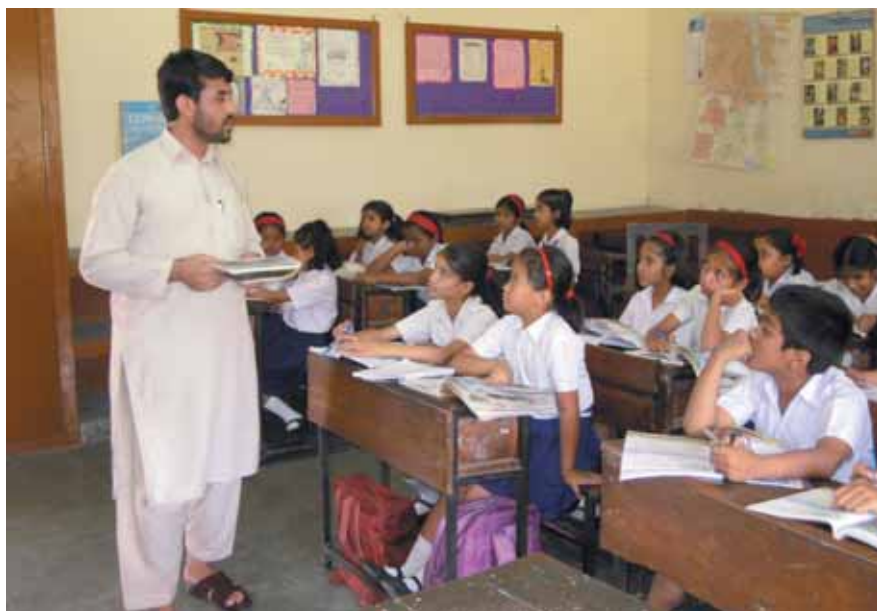
In the 1960s, the Colombo Plan enabled the NCERT to obtain science films on different school topics. Under the UN Expanded Technical Assistance Programme, the Council was assisted in equipping the Central Science Workshop and demonstration laboratories, visits of experts and training of faculty were also supported.

The Council has been the Associate Institution in India of the UNESCO Regional Centre for the Training of Teacher Educators, an Associate Centre of the APEID and a Centre of UNESCO's International Project on Technical and Vocational Education in India. The Council was also designated as the Secretariat of the National Development Group under the Asian Centre for Educational Innovations for Development in 1979.

## REACHING OUT IN THE NEIGHBOURHOOD

The Council has reached out to support India's neighbours in a variety of educational programmes of capacity building, intellectual exchange and setting up facilities. Training programmes and courses have been organised and visits facilitated for educators, students and teachers from the Maldives, Nepal, Sri Lanka, Ghana and Afghanistan. International teams from many other developing and developed countries also regularly visit and exchange knowhow with the Council faculty on a wide variety of programmes and activities.

Customised teacher education programmes have been offered to students and administrators from the Maldives and Afghanistan. The Council has also been involved in designing the teacher education course for Afghanistan.



## GUIDES FOR TOMORROW

Guidance services in school education made a beginning after the recommendations of the Secondary Education Commission (1952-53) emphasising the need to introduce planned guidance services for enabling students to plan their future wisely and for proper social adjustment. One of the institutions which merged to form the NCERT was the Central Bureau of Educational and Vocational Guidance.

Begun in 1958, the Diploma Course in Guidance and Counselling for preparing trained personnel to plan and implement guidance and counselling services at the school level has emerged as one of the Council's flagship programmes. The distinctive feature of this nine-month Post Graduate level course is its focus on providing the trainees sound theoretical orientation and practical skill training in all areas of student development and for all school stages. The course continuously evolved in line with the educational policies, emerging needs of school students and concerns of society. Latest trends in the field as well as feedback provided by trained counsellors from time to time have influenced revisions.

Since 2000 the course is also offered in its four Regional Institutes. An International Diploma Course catering to Asian and African education communities has also been initiated. This six months in-campus programme

## DEVELOPMENT OF PSYCHOLOGICAL TESTS

Development of tools for psychological assessment, one of the mandates of the Central Bureau of Educational and Vocational Guidance, was continued during the first two decades of the Council. The major tests and tools developed during this period included, Scholastic Aptitude Tests, Non-verbal Test of Intelligence, Group Test of Intelligence, Vocational Interest Inventory, Differential Aptitude Test Battery, Personality Inventory for Adolescents, Scale to Measure Adolescents' Aptitude towards Authority, Standardisation of Achievement Test Battery for Classes I to VII, Construction and Standardisation of Achievement Tests in Book Keeping and Elements of Commerce. In 1978, a library of psychological tests was established. This library has evolved into a National Library of Educational and Psychological Tests and is an archive of a large number and variety of tools and materials on testing. The library is open to faculty and trainees of the Diploma Course in Guidance and Counselling, as well as researchers and professionals across the country.



was designed on a 'teacher as a counsellor' model emphasising the teacher's special role in helping and guiding students. The first such course, in 2002-03, was offered to student-teachers from the Maldives, Sri Lanka and Zambia. In subsequent years student-teachers from Bhutan, Fiji, and from across India enrolled. In view of the more flexible approaches available in distance and open learning systems, the course, in collaboration with the Commonwealth of Learning, is now offered in a distance-cum-online mode.

A short-term in-service course for school teachers to train them as career teachers was initiated in the 1960s. It was aimed at providing teachers some basic understanding of guidance and counselling concepts and techniques. Similar courses have also been organised for the educational uplift of schools managed by educationally backward minority communities.

Research activities in guidance and counselling have also been the focus of the Council for long. Identification of developmental norms of children in the age group of 5½ to 11 years with a view to improving the process of their education was taken up on a very large scale in the seventies. In the late seventies, students from different socio-cultural groups like first-generation learners and rural children were the focus of studies with a view to promoting their development and academic participation. In the 1980s, the focus was on planning suitable interventions for various categories of student populations and to provide an empirical base to guidance services in schools. Some studies attempted to identify guidance-needs of girl students or students belonging to the Scheduled Castes or Tribes. Longitudinal

studies on adolescent development and meta-analysis of Indian studies on adolescent development helped to create a holistic picture of Indian adolescents. During the nineties, the Council's counsellor training programme itself became the subject of research. The first follow-up study of counsellors trained by the Council was undertaken to study employment status, job effectiveness and satisfaction of trained counsellors and to suggest changes for improvement in counsellor training programmes.

The Council has also provided support to various kinds of organisations in introducing guidance and counselling programmes, setting up guidance cells, training their staff, and in the organisation of specific guidance activities for students.



# *Looking Ahead*

The nation has made great progress in establishing a broad system of education, covering in its wake every aspect of school education and the needs of every stakeholder in the process. As a partner in progress, the NCERT has established an extensive knowledge base and capacities nation wide, primed to face the challenges of the times. Technological changes have delivered a new hope for productivity and efficiency. Entrepreneurs, non-governmental organisations, institutions and individuals from outside the school system have demonstrated newer ways of looking at and responding to problems. Together, they provide a great opportunity for evolving a new agenda for children, teachers and the schools; find the means to equip and facilitate their education; and to engage with all levels of society to ensure the right of every child to be in school and to look ahead.

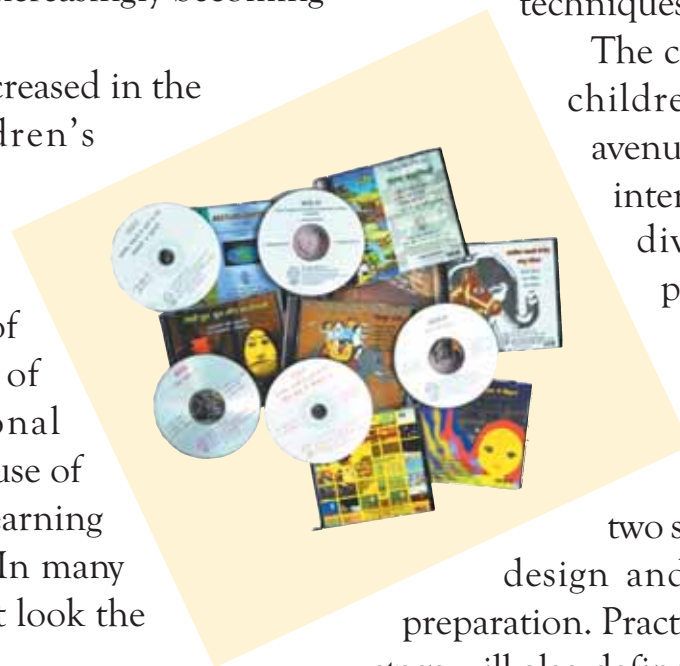


## AN EVOLVING CANVAS

In the past decades the world has witnessed a tremendous explosion of knowledge in every conceivable area of human endeavour. This has also led to a constant reassessment of the purposes of educating our children for their future, a future which is increasingly becoming difficult to visualise.

The knowledge base has also increased in the understanding of how children's capabilities develop in the cognitive, psychomotor and the affective arena. This again has sparked off a growing interest in the methods of schooling - defining the course of studies, design of instructional materials, preparation of teachers, use of newer technologies for teaching-learning and assessment of achievements. In many ways, schools and schooling cannot look the same anymore.

The curricular frameworks have reiterated this position repeatedly, each time suggesting changes in content, methods, tools and techniques in keeping with the times. Efforts at involvement with fundamental questions of education, in understanding the human mind, in understanding how it develops from infancy



through the adolescent years will continue to attract our attention. At the same time factoring in socio-cultural influences of the global village will call for newer solutions. Research into a new age of learning materials and methods will attract our attention too—research into textbooks, applications of modern technologies, teaching-learning techniques, assessment and evaluation.

The career opportunities available to our children, the growing entrepreneurial avenues and the cultural preparation for an international interaction will also need diversification of the curriculum, particularly at the end stages of schooling. A common system of general education eminently serves the needs of the early years. Rapid diversification, however, at the plus two stage will have implications for course design and development as well as teacher preparation. Practical skills required by students at this stage will also define newer laboratories and equipment. All these allude to an exciting and challenging prospect for the faculty in all disciplines, and particularly in vocational education. The Demonstration Multipurpose Schools will revisit the concept of multipurpose education and reorient themselves to showcase models for the new schools.

## RTE AND THE NCERT

Universalisation of educational opportunities is a Constitutional goal. The burgeoning population, the difficult geographies and socio-economic compulsions have, however, kept us short of delivering on this goal. The passing of our resolve into an Act of Parliament in the form of the 'Right of Children to Free and Compulsory Education Act, 2010' (RTE) is not only a recognition of the progress made so far, but also a realistic assessment of our capability to take on the challenge.

The role of the NCERT in helping unfold this national agenda is tremendous and is simultaneously an opportunity to dig deep into our capacity built over the past decades of focussed engagement with issues of education. While the nation's attention will be on providing access to schooling and providing the essential infrastructure, the challenge before the Council is to develop a framework of quality to support it.

'Education for All' necessarily attempts to bring in populations who have remained untouched – the socially challenged, the physically challenged, even the mentally challenged. Defining the

means for these groups will call for research into the challenges themselves. Redefining the curriculum, the pace of completion, preparing teachers for the new situation and equipping them with appropriate tools will also occupy attention over the years.

The ability of the communities to receive the opportunities schooling offers, has also been the focus of attention. Building capacities of the community to demand and establish facilities, recognise and monitor delivery, and participate in the process will require concerted efforts. The egalitarian goal of inclusion will





throw up challenges not addressed earlier. Social reforms are a slower process and will call for longer, multidimensional strategies.

The data gleaned out of the surveys of education show pockets of the unreached all over. Numbers of teachers and teacher quality also shows up as a major detriment to the efforts. Conventional strategies for teacher preparation have a gestation period the nation can ill-afford. The inputs provided at the pre-service stage has not exhibited long shelf lives. The imminent challenge is a re-look at teacher development, pre-service and in-service. World wide, teacher education practices have evolved, albeit to face other challenges and provide useful models for innovation. Learning from the experiments in the Regional Institutes of Education, picking up best practices from elsewhere, leveraging modern technological means and demonstrating improved throughput of teachers both in terms of numbers and preparation will strengthen the school system.

The challenge of assessment of quality teaching-learning similarly needs engagement. Efforts at reducing the constricting influence of examinations, evolving alternate means of recognising achievement, designing tools and techniques and establishing the processes in the school system would need concentrated efforts too. The Council's engagement with examination reform,



measurement and evaluation and the testing process will provide a comprehensive platform to launch these efforts.

The realisation of the RTE calls for mobilising the country's attention, imagination and energies on an unprecedented scale. The capacity of the Council to do so has been tested time and again, for example, in the establishment of early childhood care and education, the formulation and promotion of the National Policy on Education (1986), the design of different Curriculum Frameworks and consequent transformations in classroom. The Council's successful showing in each of these initiatives augurs well for the new challenges for promoting an equitable and universal access to education.

## THE NEW AGE TEACHER

The content and process of teacher education programmes were conceived for a system, which, perhaps, was much simpler in design. The singular goal of this programme was to prepare a school teacher, who was expected to shoulder the responsibilities of developing young minds, equipped with intellectual and moral faculties to face their future. Today, not only have the expectations become diverse, but the range of options varied. The skill sets have increased manifold. These changes must be understood and responded to.

The conventional scheme of defining specialisations in a school curriculum in terms of six subjects, relegating everything else into a co-curricular domain is no more a valid proposition. Teachers of the visual and the performing arts, teachers of crafts, teachers of games and sports and guidance counsellors will be needed as persons with a wide range of creative capabilities and skills required to evolve programmes leading to the all-round development of faculties of children. At the elementary stage, therefore, the course has to become intense and varied keeping in mind that it does not affect the burden on the child. At the secondary and senior secondary levels, each subject has to become diverse, vocationalisation has to be emphasised, and vocational education as a stream catered to. Teachers specialised in



these pursuits will have to be prepared. Teacher education systems catering to these diverse options will have to be re-established.

The design and development of instructional materials, books, journals, electronic offerings; research in education, monitoring and evaluation, administration and management of schools and school systems, management of information, teacher development, alternate delivery systems and the support services for an education system have emerged as a complete range of career options for a student of education.

The one or two-year diploma or bachelor's degree programme is woefully inadequate to meet all the needs. Add-on courses, offered through a distance or online mode, dual or multiple degree or diploma programmes and a complete re-engineering of the course content and methodology will have to be met to ensure a sync with changing needs. As many of the skill based add-on courses can exist independently, the proposed National Vocational Education Quality Framework would become a natural ally in benchmarking them.

The case for proactive action on many of these fronts cannot be over emphasised. Conceptualising, designing, developing, and institutionalising a modern, forward looking teacher education programme, which would prepare the teachers of the future is again an exciting and challenging opportunity before the Council.

## WIRING INTO EDUCATION

The task of generation of a large range of information and support materials in the Council through its various programmes of research, development, training and extension would serve as a reliable knowledge base, upon which can be based the multifarious activities in the State education system. Worldwide, the knowledge base has

expanded exponentially—researches, practices, models, their evaluation..., providing access to alternate conceptions to learn from. The challenge is to make them available on time and ubiquitously.

The conventional avenue of print is not only an expensive and time consuming process, but also subject to the vagaries of a distribution system, which together conspire to defeat the effort to reach the end users. With the advent of digital technologies, one need not be limited by the capabilities of the print medium.

The Council has initiated a number of experiments in exploring the digital medium, which portends a more enriched and engaging fare for the user. Online versions of textbooks for students and teachers, data and information from the different surveys carried out, training materials, research documents and journals, online courses and a diverse range of audio visual materials will be made available on the web, on tap and directly to the end users.

Not only will these provide an opportunity to reach out to larger and larger sections of the system, but also fill up a large gap of resources in the States. The initiative also has the potential of diversifying the offerings and expand the range and quality of extension and training services of the Council.





