

## Primary Education

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### INTRODUCTION

Since the publication of the Fourth Survey of Research in Education, considerable rethinking has taken place in the area of primary education. The vision and some indicators of primary education have undergone change after the publication of the report of the World Conference on Education for All (WCEFA, Inter-Agency Commission, 1990). A new terminology has emerged in the literature on the subject, a knowledge and understanding of which would be extremely useful when the author undertakes the analysis and synthesis of the results, and identifies the trend of research findings. The fact that the executive heads of the United Nations International Children's Emergency Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the World Bank felt the need for coming together and convening a World Conference on Education for All, and that too jointly, leaves little doubt about its neglect in the past and the priority to be accorded to it in the future programmes of education. The stark reality is that the dream of fulfilling every child's right to education has turned sour. It is, therefore, important that the new initiatives jointly taken by the world donors are reviewed before undertaking the task at hand.

For too long the countries around the globe

restricted the goals of Universalisation of Primary Education (UPE) to the following: provision of infrastructure and access to facilities, enrolment of children in the appropriate age-group, usually 6-11 years, and retaining these children for a full cycle of five years. WCEFA brought forth some new dimensions that had hitherto remained hidden or were accorded low priority. The salient features of departure of this document are given below for reference:

1. Elementary education, i.e., five years of primary education plus three years of upper-primary education is now termed as "Basic education". This change may cause a bit of confusion in India as it sounds synonymous with Gandhiji's basic education (which comprised seven years of education).
2. The purpose of basic education is to meet the basic learning needs of every person, i.e., child, youth and adult, thereby doing away with the differentiation between the various age-groups.
3. Learning needs to comprise both *essential learning tools (such as literacy, oral expression, numeracy and problem-solving)* and *the basic learning content (such as knowledge, skills, values and attitudes)*. This formulation of the idea of basic education makes a substantial departure from the earlier ones used in framing curriculum and defining the

universalisation of primary education. It states: "Basic education is more than an end in itself. It is the foundation for lifelong learning and human development on which countries build, systematically, further levels and types of education and training." (Article 1).

4. Education for All (EFA) represents an expanded vision which encompasses (Article 2):

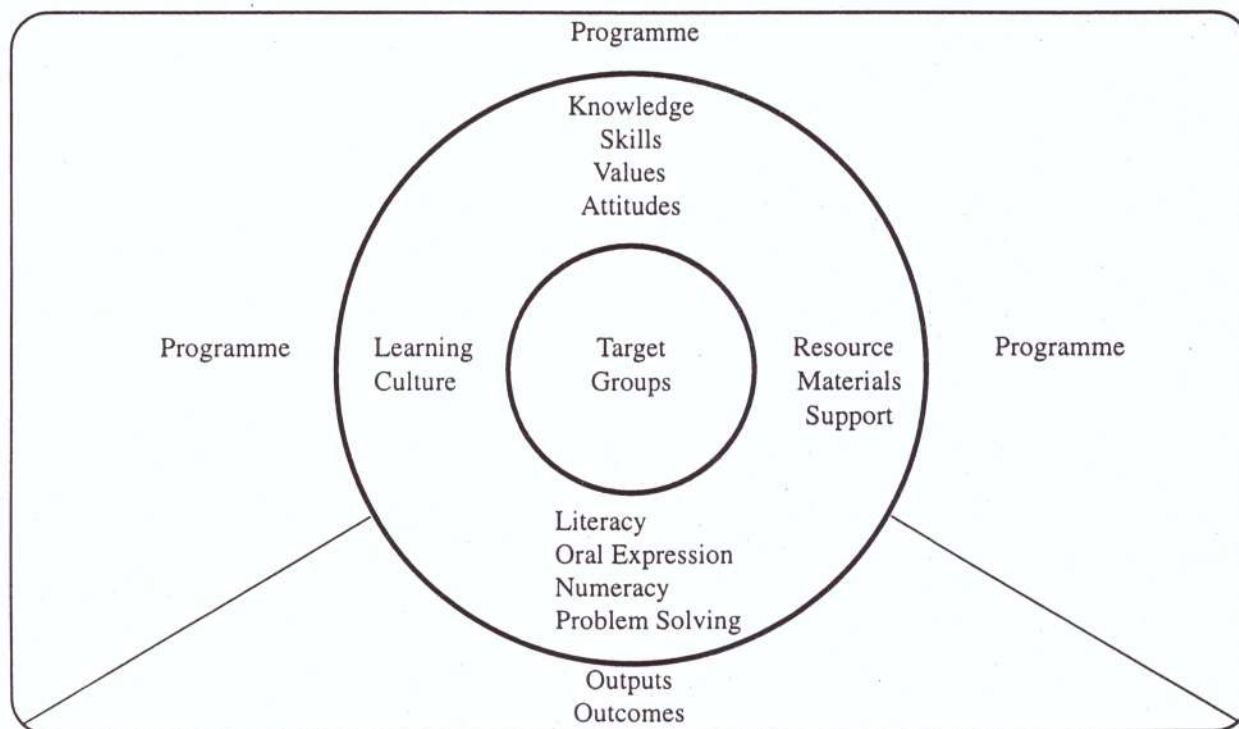
- Universalising access and promoting equity;
- Focusing on learning;
- Broadening the means and scope of basic education;
- Enhancing the environment for learning;
- Strengthening partnership.

5. Under the requirements, the following

components are included (Article 8):

- . Developing a supporting policy context;
- . Mobilising resources;
- . Strengthening international solidarity.

Asia and the Pacific Programme of Educational Innovation for Development (APEID), UNESCO Principal Regional Office (PROAP) for Asia and the Pacific, Bangkok, followed up the World Conference on Education for All (WCEFA) by organising a Regional Seminar on Educational Research on Basic Education and Literacy in 1992, in which 16 countries participated. With a view to helping map out various possibilities for research, they developed a schema that includes most of the above elements. The author reproduces the figure below, for it may serve a useful purpose for research that aims at assisting specific target groups.



*Elements in Programmes for Basic Education*

Source :

*Research in basic education and literacy—Report of regional seminar, APEID, PROAP, UNESCO, Bangkok, 1992, p. 55.*



## REVIEW

### General

While undertaking a review of research in any area of education, one faces some common problems. Before the author undertakes an in-depth review, it is necessary to discuss these problems and the approach adopted by the author to tackle them. A bibliography of research studies brought out by the NCERT (Dave, P.N. and Murthy, C.G.V., 1994) reported the collection of around 1,800 abstracts for this Survey so far. The number of studies carried out in the area of primary education is 54—that amounts to around 3% of the total research conducted during 1988-92. In terms of number, especially this being a priority area in the Indian education system, it looks quite small. However, in terms of the average number of research studies classified into 38 areas, one may view it as having an equal share of attention of the researcher in India. All the same, there is no denying the fact that this priority sector of education has not received the attention that it should have, particularly when the country has not been able to achieve the goal of Universalisation of Elementary Education (UEE) or EFA. One would wish that in future it shall receive far more attention in view of the commitment of the country to achieve the goal before A.D. 2000.

The author finds it extremely difficult to differentiate between good-quality and poor-quality research in the studies at hand. There are large studies with a much wider scope and there are small studies with a very limited scope. There are national studies while there are studies done at the regional or district or block level, covering much less ground and a far fewer number of subjects. There are studies done with a high degree of sophistication—from selection of sample to use of tools and/or performing statistical analysis—whereas there are studies that contain hardly any merit, except for the fact that they are M.Phil. or Ph.D. thesis. There

are obvious quality differences among them. It is rather difficult to refrain from observing that the quality of Ph.D. studies varies widely among themselves, and, definitely, from the independent studies. Then, there are innovative developmental projects, euphemistically called "Innovations", whose investigators do not subject them to rigorous evaluative research. In other words, unlike the R&D work in science and technology, developmental work in educational innovations appears to stop at the end of development, leaving the research part, more often than not, unattended. Since this survey has very consciously included innovations as an important part of its reporting, which evidently did not receive its due share in the previous surveys, it is very important to devote special attention to them, thereby bringing the merits and demerits of the innovations carried out in education to the fore of open discussion.

Two minor points need noting: (1) The author does not distinguish between Ph.D. and M.Phil. studies, and (2) Since most studies report multiple results, he has classified them under the 11 categories mentioned below.

The author has decided to organise the trend report not with reference to either categorisation or enumeration of results. Instead, he has deliberately chosen to dwell upon the results with reference to issues and hypotheses or theoretical deductions or predictions. In other words, our discussion more often than not focuses not so much on results but how they relate to prevalent issues, the hypotheses being investigated and the theoretical constructs. The gap then is either lack of data and therefore the need for more research, or the cumulative data contradicting or not supporting the prevalent assumptions or hypotheses or theoretical constructs, suggesting the need for doing further research or the need for generating and testing new hypotheses or deriving different hypo-deductions from the existing theories. Therefore, the approach is qualitative rather than quantitative, thereby attempting to



maximise the value of the results obtained from carefully conducted studies.

In conclusion, it is our intention to consider the above factors while discussing the trends and give due weightage to the findings that are more reliable, valid and, therefore, have a greater potential for generalisation and wider application.

### Specific

The author critically examined the studies and classified their results into the following 11 cohesive categories:

1. Historical Research and/or Studies on Goals/Aims/Objectives of Primary Education
2. Access to Primary Education—Infrastructure and Educational Facilities
3. Enrolment, Attendance and Retention in Primary Education
4. Learning Achievement of Pupils—Cognitive, Psychomotor and Affective
5. Development and Transaction of Curriculum and Curricular Materials
6. Teacher Education, Teacher Traits and Teaching Strategies
7. Management, Administration and Supervision
8. Community Participation
9. Expenditure on Education
10. Miscellaneous Results
11. Innovations.

### DISCUSSION ON RESULTS AND TRENDS

#### Historical Research and/or Studies on Goals, Aims and Objectives of Primary Education

Birdi, B. (1992) studied the growth and development of primary education in Punjab

from 1947 to 1987. The major conclusion was that while there was a considerable growth of primary education, it still lagged behind the all-India indicators. Mishra, A. (1992) also investigated the development of girls' education at the primary stage in Orissa since Independence. He reported a steady growth in the number of girls' schools from 1947 to 1965. However, the growth declined between 1965-66 and 1977-88, thereby resulting in a decrease from 2.801% in 1947 to 0.607% in 1977, even when there was a constant and steady growth of primary schools. Mishra, N. (1989) studied the development programme of primary education in Orissa with special reference to coastal districts. He reported that a majority of the subjects consisting of a heterogeneous cross-section of the society favoured the introduction of eight years of primary education so that the students could equip themselves with the necessary knowledge and skills to face the future. Mohapatra, B. (1988) undertook a historical study tracing the development of primary education in the Orissa Division of the Bengal Presidency from 1803 to 1903. He reported that Adam's survey showed the existence of a large network of indigenous schools. Missionaries introduced English education in 1835. Starley's Dispatch in 1859 re-affirmed the need for improvement of both English and vernacular education. However, according to the Hunter Commission, the Orissa division had lagged behind in the field of education. The administration took a meaningful step to introduce the Vernacular Scheme in 1901 that prescribed a method of education based on the need and availability of resources of the local area. Naik, S. (1992) studied the development of primary education in the Sundargarh District of Orissa with special emphasis on the role played by the local leadership. The findings were: (1) There was an exceptional increase in the number of schools and teachers, in general, and in Sundargarh District in particular, between 1951-52 and 1988-89, thereby resulting in expansion of



primary education facilities; (2) The State Government opened 68% new primary schools in the post-Independence period, the enrolment in which comprised 52% tribal children.

Ralte, L. (1992) undertook an analytical study of primary education in Mizoram during the post-Independence period. She reported that primary education developed in a big way in Mizoram during that period.

Rawther, S.H.Y. (1989) made a comparative study of the aims of education at the primary and secondary levels as perceived by different sections of the society in Kerala. According to him there was a consensus on philosophical, sociological, psychological and physical aims of primary education.

Mishra, A. (1989) studied the development of the teacher education programme at the primary level in Orissa. The study traced the development of professional training of teachers in Orissa from 1864 to the present day. He concluded that although the number of training schools, later called secondary training (S.T.) schools, increased from 2 in 1951 to 70 in 1960, they lacked the infrastructure as well as the human resources for effective implementation of the teacher education programmes.

### *Trend*

One cannot help recognising the fact that the number of studies is small, and a large number of studies come from Orissa while one each comes from Kerala and Mizoram. Naturally, the question arises as to why there is no study from any other States, especially from the other less educationally developed States, viz. Andhra Pradesh, Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Rajasthan, Uttar Pradesh and West Bengal? Although one would not venture to generate a major hypothesis from such limited studies, the results strongly support the fact that there has been substantial growth and development of education in the post-Independence period in Orissa. Notwithstanding that fact, it is equally true that this did not

match the quality. The picture in other states would not be much different, if one peeps into their past historical educational development.

The author feels that the small number of studies, and the fact that virtually no study has been reported from other Indian universities, seem to indicate that there is a neglect of historical research in our universities. There is no denial of the fact that the researcher has been opting for other types of research such as evaluative, experimental, psychological testing, etc. Continuity in historical research is necessary for a healthy balance among the different areas of research. One would hope that in the era of quantification of information, this area may not die.

### **Access to Primary Education—Infrastructure and Educational Facilities**

The Fifth All India Educational Survey (NCERT, 1992) reported the increase in access to schooling facilities from the time of the Fourth All India Educational Survey. The highlights were: (1) 94.60% rural population was served by primary sections located either within the habitation or up to a walking distance of one km as against the 92.82% population served in 1978; (2) However, only 13.25% habitations covering 36.98% of the rural population had upper primary schools or sections within the habitation of residence. The corresponding percentages for the Fourth Survey were 10.74% and 33.47%, respectively. (3) The percentage of pucca or partly pucca primary school buildings increased from 59.90% to 72.75%, a substantial increase indeed. Batra, P. (1991) conducted a socio-psychological study of children in Classes I and II in Betul District of Madhya Pradesh. She reported poor state of school buildings and lack of teaching materials and aids in the primary schools. Bhargava, S.M. (1990) covered a span of 40 years of the growth of educational facilities at the elementary stage in India. However, he made state-wise analyses of the growth of primary education only from 1975 to



1986. The findings were: (1) Educational facilities grew steadily and substantially, i.e. from 59.75% in 1957 to 80.34% in 1986; (2) Educational facilities for girls and ST and SC improved remarkably, i.e., from 38.5% in 1978 to 74.46% in 1986; (3) Middle-stage education facilities increased from 3.13% in 1957 to 13.25% in 1986, with one km distance from school being the criterion. In spite of this, UEE still remains a distant dream. Buch M.B. and Sudame, G.R. (1990) carried out an in-depth study of the status of primary education in selected urban areas in Gujarat. Their conclusions were: (1) A large number of primary schools, irrespective of their managements, faced shortage of space; (2) Many of them were located in areas that were prone to heavy traffic and noise pollution; (3) The location of some of these schools was in unhealthy surroundings and even frequented by anti-social elements; (4) Many primary schools did not have their own buildings and conducted classes in rented buildings; while most of these schools had provision of drinking water, some of them lacked toilet facilities, libraries and laboratories. Through a well-designed case study of primary schooling in Madhya Pradesh, sponsored by IIEP, Paris, Govinda, R. and Varghese, N.V. (1991) derived the conclusion that the level of infrastructure facilities provided in the schools played an important role in improving the teaching-learning environment and, consequently, the learners' achievement level as well as overall school quality. Gupta, R.K. and Gupta, D. (1992) investigated the extent of utilisation of the equipment and educational materials supplied to primary schools in three states, viz. Gujarat, Rajasthan and Tamilnadu, under the centrally sponsored Operation Blackboard Scheme (OBS). They reported that: (1) 83.8% of the schools had two all-weather rooms and 55.6% of schools had *verandahs* whereas only 9.7% of schools had toilet facilities; (2) While 46.2% schools had at least two teachers, 20.4% had more than two teachers; (3) The female teachers constituted

less than 50% of the total teachers; (4) The majority of the schools received the educational materials although the percentage of items received differed from item to item, i.e., 56% (syllabi) to 99.5% (mathematics kit—the receipt of newspapers and magazines 0.00% being an exception); (5) The majority of the teachers (93.5%) was using the materials supplied; and they opined that these supplies would help improve enrolment, retention and achievement level of pupils. Hasan, A. (1992) reported that while physical facilities in schools, especially in rural schools, were inadequate, teaching conditions of schools were considerably good in four districts of Bihar. Naik, S. (1992) reported that there was a substantive, quantitative expansion of primary education in the tribal district of Sundargarh. Packkiam, M. (1990) investigated the implementation of OBS in Sakkottai Panchayat Union, Tamil Nadu. The conclusions of the study were: (1) 83% of primary schools did not have adequate physical facilities; (2) The OB materials were utilised to a great extent by the teachers; however, the private school teachers utilised the classroom teaching materials, i.e., primary science kit, library books and classroom equipment to a greater extent than their counterparts in the government schools. There was no significant difference between these two groups in the use of play materials, game materials, mathematics kit and musical instruments. Ralte, L. (1992) reported that only 55% of the schools had properly partitioned classrooms. Store room, students' common room and library room, etc., were almost non-existent. Sarma, H.N. et al. (1991) studied primary education problems in Jorhat District of Assam. Their conclusions were: (1) Lack of physical facilities at school was a major problem; (2) In 81.0% of schools, no teaching aids were available. The same team of researchers undertook a similar study to identify the problem of the upper primary stage, i.e., Classes VI to VIII. The major findings were that these schools were much better off than the primary schools with respect to physical



facilities and teaching aids, i.e., 74.0% had permanent buildings as well as blackboards (BBs), 57% had urinals, (exclusive of 16% latrines), 44% had drinking-water facility, 68% had teaching aids, 58% had playgrounds and 68% had a games teacher. Sarma, N. (1992) studied the problem of the children of the Tea Garden Labour Community. Her major conclusion about the physical facilities was that the overall conditions were far from satisfactory, for 80% had a single hall with no partition between the classes, 90% had no urinals or latrines and 60% had no provision of drinking water facility; few schools had an adequate number of desks and benches. Sharma, A. (1992) conducted an evaluative study of non-formal education in U.P. She concluded that the majority of learning centres (62%) were located according to the convenience of the learners. However, the provision of physical facilities was not fully satisfactory since only 20% of centres had good physical facilities whereas 46.6% were working in adequate conditions; but 50% were functioning without textbooks or learning materials, stationery, etc.

### *Trend*

What major trends are discernible? First, conceding the fact that a very limited number of studies are at hand, and that too mostly from the Eastern region, the conclusion is inescapable, that the infrastructure facilities are woefully inadequate in our primary schools. It is pertinent to point out here that the Fifth NCERT All-India Survey (1991) presents a much better picture. Nevertheless, the results strongly suggest that so far as the provision of infrastructure facilities is concerned, the situation has hardly changed since a constitutional pledge (Article 45) was made to provide for free and compulsory education for all children until they complete 14 years of age at the time of approval of the Constitution by the Parliament (26 November 1949). The knowledge that provisioning in the urban

schools of Gujarat was no better than that in rural schools comes as a rude shock, thereby showing how the situation regarding access to primary education has been deteriorating in spite of pledge after pledge made by the successive governments both at the central and state levels. Even the depleted provision gets more depleted when it reaches the disadvantaged sections of the society as the dire situation in the Tea Garden Labour Community indicates. It will not be an error if one infers from the study of upper primary schools in Assam that in India the access to school education becomes better as the stage of education increases. The provision for higher education is the best while the same at the primary stage is the worst. The upside-down-pyramid of education has not only remained stable but also seems to have been strengthened in the post-Independence era. Fortunately, India has established a tradition of carrying out periodical census surveys of education. While scholars and policy makers have taken serious note of the all-India survey data and the Central Government has initiated some actions, like the implementation of the OB scheme throughout India, though belatedly, one hardly sees any notice taken of the data available or any initiative and action taken at the state level. The fact of the matter is that statistical data collected by utilising scarce personnel and finances at the grass-roots level remain buried in the official cupboards in the states of the Indian Union. More disappointing, if not depressing, is the fact that the academic community at the university and at other research institutes, has also not exploited the available data, nor have the policy makers used it for creating an equitable distribution of resources. In other words, the policy makers did not utilise the available information for the need-based planning at the micro level. It is needless to emphasise the need for undertaking systematic census as well as sample surveys and making efficient use of them for micro and macro planning of education in the country.



Next, the studies on the implementation of the OB scheme clearly indicate that the provision of educational facilities is welcomed by the teachers, and they believe that these facilities would help in attracting, retaining and raising the achievement level of children. These preliminary studies are encouraging, and they suggest an urgent need for undertaking in-depth studies in each and every state to find out the exact status of the receipt of materials, and not only the extent of their use by the teachers but also their impact on the enrolment, retention and achievement of pupils. An independent scholar cannot help commenting upon the negligence of the planners of the scheme for not acting on the built-in monitoring and evaluation components in a multi-crore-rupee funded massive scheme like this. A follow-up scheme like this cannot be left to the will of individual researchers or research institutes. Each state obtained a huge grant from the Government of India and, therefore, both of them owe an answer as to the fate of the grant as also to whether the objectives underlying the scheme were achieved or not. One hopes that the next Survey of Research will have many studies on the implementation of this scheme. The OB scheme and its implementation apart, the very assumption that equipping primary schools with essential educational materials would help in enrolling, retaining and enhancing the achievement of pupils, needs the backing of adequate research evidence, when the scarce financial resources are diverted to it.

Further, a lone study on non-formal education suggests that the infrastructure, especially regarding the availability of educational materials, is in no way better than that available in the regular schools. If the underlying assumptions of the OB scheme are valid, one wonders how the expansion of the non-formal sector without such facilities would help achieve the goal of UEE. Unless the government ensures the equitable distribution of resources between these two sectors, as has been time and again pleaded by the protagonists

of this sector (Dave, P.N. 1992), its contribution to UEE will be suspect to the public, thereby strengthening the very opinion that second-rate education is being imparted to the second-rate citizens.

Recalling the emerging concept of basic education, one cannot help commenting that the physical aspect of the *Learning Environment* leaves much to be desired in India. A one-time intervention like the OB scheme may not bring permanent benefits to primary schools. Continuity of assistance, and what is more important, the efficient management of the assistance is the need of the hour. That a conducive learning environment would have a salutary effect on the learner, cannot be disputed. It is beyond one's comprehension as to why such pitiable infrastructure conditions should exist even after more than four decades of Independence, and more particularly when there exists in almost every town and city an enviable, posh private schooling facility. Inequitable and discriminatory distribution of education facilities is certainly not compatible with good democratic governance. There is no denying the hiatus existing between the haves and the have-nots. This is the green area for further research.

### **Enrolment, Attendance and Retention in Primary Education**

#### *Enrolment, Attendance and Retention*

The Fifth All-India Educational Survey (NCERT, 1992) reported the Gross Enrolment Ratio (GER) of 93.63% in 1986 at the primary stage, an increase of 11.92% over the GER of the Fourth Survey completed in 1978. The increases in SC and ST enrolments were 48.81% and 62.35%, respectively. The increase in the GER of girls from the Fourth Survey to the Fifth was only 4.69%. It was less than half of the increase in the total GER, a clear indication of less progress in enrolling girls. The GERs in the 32 states and Union Territories (UTs) ranged between



133.13% and 123.18% for Goa (small state) and Andhra Pradesh (large, educationally backward state) and 157.19% for Daman and Diu (small UT) to 69.29% in Uttar Pradesh (the largest state). If on an average 25% of the GER are under-age and over-age children, one would deduce that the educationally backward state of Andhra Pradesh has attained the universal enrolment whereas Uttar Pradesh has a long way to go as only 44.29% of the primary-school-age population was enrolled in schools. Goa and Andhra Pradesh (small and large states) led the girls' GERs, i.e., 127.22% and 117.83%, while the GER of Uttar Pradesh was only 50.33%, indicating that hardly 25% of the primary-school-age girls were enrolled, presenting thereby quite a distressing scenario. Bhattacharya, S. (1991) carried out a comprehensive impact study of Project Nutrition, Health Education and Environmental Sanitation (NHEES) covering eight states. She reported that the attendance of pupils in Classes I-V, who belonged to the economically disadvantaged sections of the society, was highly satisfactory (CI-I M=76.52%, CI-II M=79.80%, CI-III M=80.37%, CI-IV M=81.67% and CI-V M=79.61%). Buch, M.B. and Sudame, G.R. (1990) in their study of achievements of urban primary school-children, reported that, whether continuous or casual, drop-out was the maximum in Class I and decreased from Classes I to IV. A similar trend was evident in the rate of wastage and stagnation, i.e., from 61% in Class I to 54% in Class IV. Chavares, D.S.'s study (1991) indicates more or less the same trend of decreasing drop-outs in the municipal schools of Pune city, i.e., 32%, 15%, 12% and 8% in Classes I, II, III and IV, respectively. Gupta, J.K. et al. (1989) investigated the problem of stagnation and drop-outs using a two-stage sampling scheme in the nine educationally backward states. Their findings are of great importance since they were derived from a carefully designed sampled study. These were: (1) The overall drop-out rate was more than 60% in Andhra Pradesh,

Bihar, Jammu & Kashmir and West Bengal whereas Assam, Orissa and Rajasthan registered a rate of less than 50% and Madhya Pradesh registered a rate of 58% drop-outs; (2) More than 60% of the pupils completed the primary education cycle without repetition in Jammu & Kashmir, Orissa and Rajasthan, while only about less than one-third of the pupils completed the cycle in Andhra Pradesh, Assam, Bihar and West Bengal; (3) In all the States, three-fourths of the total years spent in excess were attributable to drop-outs while the remaining, i.e., one-fourth, were attributable to repeaters. Hasan, A. (1992) surveyed the scenario in four districts of Bihar. He concluded that in respect of enrolment and attendance, Ranchi District occupied the first position with 60%. However, in the other three districts, namely, West Champaran, Sitamarhi and Rohtas, the attendance ranged between 30% to 40%. Mishra, A. (1992) reported through his study of qualitative and quantitative expansion of girls' education in Orissa from 1947 to 1977 that Cuttak District registered the highest enrolment (217,000) whereas the Phulbani District the lowest, i.e., only 30,000. Raina, B.L. (1988), who studied the education in a village of Jammu & Kashmir, reported that the girls' enrolment was only 12%. Moreover, while the average rate of drop-out over years (reference for the duration of the period not given) was only 13%, the rate for the year 1977 was 30.70%. According to Ralte, L. (1992) the participation rate in primary education gradually increased from a low of 50% in 1948 to 93% in 1979. However, the percentage of wastage of girls (36.8%) was slightly higher than that of boys (31.3%). Sachchidananda (1989) undertook an in-depth analysis of disparities in elementary education in Bihar State. His conclusions were: (1) In respect of literacy and elementary education, Bihar is far behind most of the other states in the country; (2) The drop-out rate at the elementary stage was heavy and had increased over the years; (3) Until the children completed the first three years of schooling, they



tended to relapse into illiteracy; (4) The literacy and enrolment were poorer among SCs and non-Christian tribals. Sarma, H.N. et al. (1991) identified the problems of primary education from a sample of 30 schools in Jorhat District. According to them, 64% of the teachers and headmasters considered pupils' irregular attendance as a major problem, suggesting thereby that though children enrolled, they were not able to attend school regularly. Obviously this resulted in stagnation due to poor achievement. The same team of investigators, through their study on the upper primary classes, underscored that only 54% of the pupils were regular in their attendance. Sharma A.'s (1992) study on non-formal education in Uttar Pradesh indicated that most of the drop-outs were in the first or between the first and the second years. Thakur, T. et al. (1988) studied the incidence of drop-out in Assam covering 22 sub-divisions of 18 districts through the random stratified technique. Moreover, they followed the true cohort method to compute the rates of drop-out, stagnation and regular promotion. The findings were: (1) The rates of drop-out, stagnation and regular promotion were 16.13%, 46.19% and 37.68%, respectively; (2) The rate of drop-out was the highest in Class I; (3) The rates of drop-out, stagnation and regular promotion for boys and girls were 16.96%, 15.0%, 39.74%-54.87% and 43.3%-30.12%, respectively; (4) The rate of drop-out was the highest in the ST area, i.e., 24.59%, and the least in the urban area (12.7%); that for stagnation was the highest in Char area (87.43%) while the lowest was in the urban area [% not available (n.a.)]; that for regular promotion was the highest in the urban area (43.3%) and the lowest in the Char area (13.04%); (5) Out of the 22 sub-divisions, Nalbari recorded the lowest rate of drop-out while Mangaldoi recorded the highest (29.4%); Mangaldoi recorded the lowest stagnation rate (39.1%), and Borpeta, the highest (70.98%). Vyas, J.C. et al. (1992) studied the drop-out rate in Rajasthan in 1992, using the circular

systematic sampling technique. The sample comprised 13,979 students from 413 elementary schools — 9,891 boys and 4,288 girls who enrolled in the first session of 1985-86. Their conclusions were: (1) The total drop-out rate was 44.66%, while that for girls was 53.67%; (2) Significant differences existed between the drop-out rates of urban and rural schools (30.39%-42.98%); girls and boys (52.24%-43.98%); ST and SC children and others (more in ST children, percentage n.a); children of labourers and businessmen/service people (53.17%-40.04%/40.22%), and handicapped and normal children (37.34%-44.69%); (3) The distance from residence to school was not related to dropping out; (4) The incidence of drop-out was more (75%) in the integrated unit system, i.e., in Classes I and II, than in the traditional regular class system, which went up to 90% by the end of Class III; (5) The teacher-pupil ratio was correlated to the drop-out rate; (6) A significant relationship did not exist between the infrastructure facilities and drop-out.

#### *Causes of Non-enrolment, Non-attendance, Drop-out and Stagnation*

Sachchidananda (1989) enumerated the causes of the backwardness of Bihar in education. The causes were as follows: poverty of rural families, lack of teachers' commitment to their duties, lack of effective supervision and rampant corruption in the supervisory cadre, paucity of woman teachers, highly politicised teaching community and less representation of SC and ST teachers. Sarma, N. (1992) who also studied the problems of non-enrolment and non-retention in the district of Sibsagar in Assam, listed the following causes in the order of importance: involvement of children in domestic and non-domestic work, parental unawareness of the importance of education, non-congenial home environment, parents' inability to provide school materials to their wards, difference in the language spoken at home and that spoken



by the teacher in school, poor parent-teacher relationship, differential expectation from the parents and poor physical facilities in schools. The causes of drop-out listed in the study of Rajasthan (Vyas, J.C. et al., 1992) were as follows: personal causes—poor financial conditions of the family (the most important of all), adverse family circumstances, parental unwillingness, illiteracy of parents, illness/demise of parents, lack of interest or weakness in studies, illness, inferiority complex, handicapped, over-age, drop-out of friend/sibling and difficulty in finding a bridegroom for literate girl; school-related causes—non-availability of lady teachers, coeducational system, and lack of interest on the part of teachers. In the Haryana study of drop-out among socio-economically deprived elementary students, Yadav, B.S. (1991) listed the following causes: According to teachers—non-detention policy of the state government in Classes I-III, engagement of children in the fields during the sowing and the harvesting seasons, heavy syllabi causing disinterest in pupils, illiteracy of parents, punishment at school, overcrowded classes, large family size and poor teacher-pupil relationship; according to pupils—punishment by teachers, use of guides instead of textbooks in teaching, parental ignorance of the value of education and priority of household work for girls; according to parents—coeducational schools, lack of interest of teachers and non-receipts of progress reports. As a whole, the findings strongly indicate that the scenario being unfolded in the states, specially at the micro levels in pockets of the deprived sections of the population, is undoubtedly disheartening, if altogether not depressing.

### *Trend*

The author has lamented the small number of studies available in this area. However, it is important to note that the coverage in terms of sampling, the multiplicity of results and the quality of research tend to compensate that

inadequacy. There are a few unusual and interesting results that raise questions about some *ad hoc* policy decisions, popularly held beliefs and proven assumptions or hypotheses. There is ample material for discussion and reflection and for venturing into suggesting further, or even, a different type of research.

The picture of enrolment that has emerged as a consequence of the Fifth Survey strongly indicates a substantial improvement even when the proportion of under-age and over-age is reconciled, except in the case of Uttar Pradesh and, to some extent, Bihar, Jammu & Kashmir, Rajasthan and West Bengal, which are hovering around 80% of GER. The fact that it has been possible to make this progress is no mean achievement in spite of the fact that the infrastructure is woefully inadequate and lacking in basic amenities and utter lack of commitment and disinterest on the part of the teaching community.

When one looks at the data on attendance of primary school-children, the results are not conclusive. The larger study of eight states by Bhattacharaya, S. (1991) strongly indicates that the attendance of children in all five classes was highly satisfactory. On the other hand, most other studies present a not so rosy picture, especially in Bihar and Assam.

The studies on causes of non-enrolment, non-attendance, drop-out and stagnation, though small in number, vindicate the previous research findings and the common perception of the public. Since the study clubs the causes together it is very difficult to rank them according to some weightage. Nonetheless, there is hardly any doubt that, as a prominent sociologist (Sachchidananda 1989) lamented, the poverty of the families, particularly of rural folk and, therefore, the need for engaging children in domestic or non-domestic labour, is principally at the root of these phenomena. The author strongly believes that unless some sort of threshold of development is achieved the returns from investments in primary education are not



going to be cost-effective. The author has discussed this point at length in the trend below.

The studies on drop-out and stagnation strongly suggest that the problem persists, nullifying the attainment of high GERs, nearing 100% net enrolment ratios. The study of nine educationally backward states (Gupta, J.K. et al., 1989) shows a slight differentiation in drop-out among these States, i.e., 50%-60%. According to them, three-fourths of the total years spent in excess are attributable to drop-outs while the remaining one-fourth are attributable to stagnation, indicating thereby that drop-out remains the major problem. However, a careful cohort analysis by Thakur, T. et al. (1988) supports a hypothesis that stagnation (46.19%) is a more acute problem than drop-out (16.13%). The more interesting is the finding that while no sex difference exists in drop-out (16.96%-15.0% for boys and girls), the difference in stagnation is quite wide, i.e., 39.74%-54.87%, indicating strongly that for well-known reasons girls repeat classes more than boys. It is a most heartening thing to note that despite several barriers, girls stick on and stay on, when boys prefer to quit. Obviously, two distinct hypotheses are emerging: wastage is due to (i) drop-out, or (ii) stagnation. This needs rigorous follow-up through micro-level cohort studies. Studies show that stagnation, i.e., taking a year to or two more for completing a set cycle of schooling is a universal phenomenon (Dave, P.N. 1992).

As the study of children (in the age-group of 6-13 years at Barbiana, carried out over a period of eight years shows, school "wastage" (repeating classes and leaving to work) is progressively affecting two-thirds of pupils...children have to repeat classes from the earliest years and throughout their schooling.

If the problem of the Indian primary education system is also stagnation, it is a hopeful sign—that is, children, even the disadvantaged ones, refuse to be pushed out of the system. The developed countries' experience apart, there is an indirect support to this

changing situation in the increased GERs reported in the Fifth Survey. The GER of 125% is indicative of the attainment of universal enrolment. What does greater than 125% GERs mean? Has Andhra Pradesh universalised enrolment? Definitely it has not. There is a high probability that the percentage of over-age children is increasing as repeaters. For example, the GER of 150% means 100% normal age population +50% under- and over-age population. Obviously, a larger proportion of over-age children than the under-age ones constitutes this additional GER. There seems to be correlation between GER and stagnation. This indeed needs meta-analysis of all research completed since the publication of the First Survey and further research with specific hypotheses in view.

In this connection, the author would like to dwell upon a controversial chicken-and-egg type hypothesis. Juxtaposing it in terms of primary-education-and-development, a doubt is being raised whether economic development depends upon investment in primary education or education depends upon development. Put differently, which is a true antecedent variable—development or primary education? The WB's position is clear and categorical that it is selling to those countries that have yet to achieve full universalisation of primary education or completion rate of the relevant primary-school age-group children. The following quote from its document makes their position clear (WB 1990):

Education is a cornerstone of economic growth and social development and a principal means of improving the welfare of individuals.

Primary education has direct and positive effect on earnings, farm productivity, and human fertility, as well as intergenerational effects on child health, nutrition, and education. In considering the effects of education on economic productivity, a wide number of studies conclude that *investments in primary education yield returns that are typically well above the opportunity cost of capital.*

Those deeply involved in this sector at the



micro level in the developing countries are rather unwilling to buy this hypothesis lock, stock and barrel, since their experiences are different. While they wholeheartedly believe in higher investments in education, and in primary education in particular, and plead for it with their governments, they feel equally, and strongly, that unless economic development crosses a threshold, such investments have hardly any or, if any, only marginal effect on enrolling and retaining children in school. To put it plainly, as highlighted under *causes* above, the population below the absolute poverty line neither will be able to nor ever willing to send their children to school. The school, however attractive it is made, will not be able to attract poverty-ridden children to school, leave alone retain them or enable them to achieve a minimum level of achievement.

Without challenging 'the direct and positive effects' of primary education, attention is drawn to some examples which have not shown such relationship between these factors. In the end, in the author's opinion, it is more important to know why some efforts in this direction have failed. Why are there exceptions? At the macro level, the author would like to compare two important antecedent variables, namely, Population below Absolute Poverty Line (PAPL) and Per Capita Income (PCI) with the GERs of Bangladesh, India and Pakistan:

Population below Absolute* Poverty Line		GERs- 1984-86** Total Girls		Per Capita Income
Bangladesh	45%	68%	49%	\$ 220
India	30%	107%	70%	\$ 310
Pakistan	22%	55%	32%	\$ 440

\* From an official communique at the SAARC Finance Ministers' Conference held at Dhaka Year *Daily Star*, Dhaka. Original Source: UNDP report, 1994.

\*\* Source: UNESCO, Paris, (In one of the papers circulated at the WCFEA held in Jomtein, Thailand, in March 1990.)

The data in the table clearly shows that GERs, including those for girls, i.e., UPE indicators, are not related to economic

development and, therefore, cannot be claimed to be the antecedent variables for development. With the lowest GERs, Pakistan is way above both her neighbors in both economic development and poverty alleviation. The more puzzling question is that Pakistan has achieved this with the lowest educational development of the female child. Reverting to the Indian scenario, one can raise the same question with respect to Kerala (GERs in Classes VI-VIII—total and for girls: 88.28-88.09; NCERT, 1989), which has universalised primary education long ago, on the one hand, and Haryana and Punjab on the other (GERs for sex in the same classes: 59.31%-39.89% and 60.19%-54.15%; NCERT 1992). Why has the economic development of Kerala lagged behind these two States? One has to explain the exceptions, because the factors other than the standard set presented all the times, seem to influence the relationship. To put it in statistical jargon, some extraneous factors also appear to account for some part of the variance that seems to explain the relationship between these two factors. The author would like to emphasise that the relationship between these two factors seems to be to much more complex than it has been made out so far. Therefore, Indian research needs to pursue a variety of approaches in exploring and solving this enigmatic problem.

The author has already made a positive comment on undertaking periodical all-India educational census surveys. Until now, they have not come out as regularly as the census surveys on population have appeared in the country. The author strongly supports that this activity be institutionalised. It is a welcome news that the Sixth All-India Educational Survey is in progress and there is a high probability of creating an educational database at the district level. One would only wish that these databases become the part of the national databank so that the retrieval of information could be instantaneous for research analysis and synthesis. The author also reiterates that academics and policy makers, both at central



and state levels, should make use of the available information in the way the data obtained from the national economic surveys are meaningfully utilised in preparing the annual finance budget. One would hope that in similar fashion the educational planners use these data for the macro- and micro-level planning. Finally, the time has come to test some assumptions underlying the survey indicators. For example, how far valid is the assumption of locating a school at the distance of one or three kilometres from home? The Rajasthan study suggested that the distance from home had no effect of drop-outs. Should not one view this problem from an entirely different angle? Similarly, can one not view the idea of habitation from a different outlook? If the idea of micro-planning takes root and the administration gets decentralised at the Panchayat level with the true autonomy in the hands of the community, would it not be beneficial to take a village or a cluster of villages as reference points and also leave the decision of locating an educational facility to the local community?

### **Learning Achievement of Pupils—Cognitive, Psycho-motor and Affective Development**

#### *Cognitive Development*

Amanda, S.M. (1991) designed a study to explore the relationship between infant-feeding practices and nutrition and cognitive development, i.e., intelligence and achievement. According to her: (1) A significant relationship existed between breast-feeding (at least for four months) and intelligence but not with achievement; (2) Children with a longer duration of breast-feeding (for more than four months) possessed better mental abilities than those with less than four-month duration or those who were artificially fed. Bhattacharya, S. (1991) studied further the relationship of several variables to pupil achievement in nutrition, health and environmental sanitation. The crucial criterion

for judging the impact of the innovative project was total pupil achievement (T. Ach.), which was further divided into more sub-components, viz., Knowledge (K), Understanding (U), Application (A) and Skills (S). The major findings were: (1) The impact of the project intervention was significantly positive in enhancing the level of pupil achievement in all the five criterion components; (2) The total achievements of pupils of Classes I and II were quite high (Class I M=71.09% and Class II M=62.36%), thereby indicating almost mastery level of achievement of pupils in T. Ach., K, U, A and S; (3) The achievements of pupils of Classes II and V were below the average (Class III M=45.87% and Class V M=44.94%) whereas that of pupils in Class IV was above the average, i.e., M=55.50. Thus, there was a sudden slump from a high level of pupil achievement in Classes I and II; (4) No relationship existed between sex and pupil achievements, that is, any of the five components; (5) Attendance and socio-economic variables, namely, parental income, fathers' and mothers' occupations, education and social status of pupils (disadvantaged or advantaged) were significantly related to these criterion variables; however, the magnitude of the relationship was so small that at no time they accounted for more than 10% and 5% of the total variance respectively; (6) The factors of school ecology (learning environment in the Basic Education terminology) had a greater impact on pupil achievements than those related to home ecology; (7) Simultaneous programme of the community education helped reinforce the leaning achieved by pupils in school. Buch, M.B. and Sudame, G.R. (1990) in their study of achievement of urban primary school-children did not report the level of pupil achievement. However, they noted that the achievements of the children in private schools in Gujarati language and mathematics were better than those studying in the municipal schools. Further, boys and girls did not differ in their achievement in these two subjects. Dave, P.N. et al. (1988) conducted a comprehensive



evaluation of the project Primary Education Curriculum Renewal (PECR), the implementation of which took place during 1975 to 1985 in 30 states and UTs. In the final count, the data of the sample study consisted of 11,343 pupils from Classes I-V drawn from 141 Project and non-Project schools scattered in 22 States and UTs. Noteworthy was the feature that the sample comprised 50% children from the disadvantaged sections of the society, while the girls consisted of 43.63%, which was slightly more than the national sex ratio, i.e., 41.16%. The major conclusions were: (1) The impact of the project was positive as it significantly enhanced the level of pupil achievements in language, mathematics and environmental studies (EVS) at the primary stage (except in Language in Class I); (2) The pupil achievement in Language was excellent in Classes I and II, good in Class III and minimum (35% marks required for promotion to the next class) in Class IV (the combined means being 63.75%, 55.22%, 41.27% and 34.65%, respectively); (3) The pupil achievement in mathematics was excellent in Classes I and II, good in Class II and below minimum in Class IV (the combined means being 61.25%, 67.08%, 50.80% and 32.31%, respectively); (4) The pupil achievement in EVS was excellent in Classes I and II (the combined means being 73.23% and 68.22%, respectively); (5) The pupil achievement in EVS (Social Studies) was average in Class III and below minimum in Class IV (the combined means being 48.94% and 34.28%, respectively), and the achievement in Science was average in Class III and below minimum in Class IV (the combined means being 47.90% and 31.94%, respectively). Govinda, R. and Varghese, N.V. (1991) demonstrated with the help of their well-designed study that: (1) The performance of schools with one teacher per grade was better than that of schools having multi-grade teaching; (2) The performance of learners taught by generalist teachers teaching all subjects was lower than and inferior to that of learners taught by specialist teachers; (3) A high correlation

existed between achievement and the time spent on teaching-learning; (4) The teaching practice like explanation of concepts with the frequent use of BB, motivating students by asking questions, regularity in the classroom, regularity in giving and correcting homework and revision of previous lessons by teachers, were positively related to pupil achievement; (5) Possession of textbooks by children was an important correlate of achievement. According to the study of the Maharashtra children of Wardha District by Khadse, I.B. (1992), the language development of children brought up in joint families was better than that of those brought up in the nuclear families. Padhan, A. (1991) undertook an input-output analysis of primary education in Sambalpur district of Orissa during 1975-88. His finding was that school cost, teachers' qualification and experience, and SES of students had no impact on scholastic attainment when the effect of the remaining variables was kept constant. Prabhakar, S.P. (1989) related mental development and scholastic achievement to previous nursery experience of the elementary children and found no significant impact on mental development, but the scholastic achievement of girls was higher in the case of those who had such nursery education experience. Ralte, L. (1992) in her study of development of primary education reported that the overall performance of candidates in Mizoram, who had appeared in the Primary School Scholarship examination, was not satisfactory on the achievement tests in mathematics, English and general science. Rawat, G.S. (1987) reported that the academic achievement was significantly better when the comparisons were made for the total sample with respect to sex, age and grades. The Jorhat District study (Sarma, H.N. et al., 1991) disclosed that a significant correlation existed between the achievement of cohorts of Classes III and IV. Regular attendance and academic achievement correlated. However, no correlation existed between physical facilities and academic achievement. Shukla, S.L. et al. (1992) carried



out a comprehensive survey of attainments of primary school-children in various states in India. The overall conclusion was that while there were differences in the attainments of children in the different states, the overall attainment of the total (aggregated) sample was satisfactory.

### *Trend*

Admitting the fact that not much research is available in the area, two opposing trends have emerged: one, a few small studies show that the pupil achievement is not satisfactory, although concrete data are not available; two, the three all-India level studies on pupil achievement (Bhattacharya, S. 1991; Dave, P.N., et al. 1988 and Shukla, S.L. et al. 1992) demonstrate that it is not so unsatisfactory. The results of the study by Dave, P.N., et al. set in motion the attempts for defining the Minimum Levels of Learning (MLL) at the primary stage at NCERT. The question has been tied with what minimum levels of learning should be prescribed at the end of the primary stage since the claim for attaining *universalisation of UPE* has to demonstrate that in addition to universal enrolment and retention a defined level of achievement, i.e., MLL's have also been achieved by the pupils. The author considers this a welcome sign and an excellent opportunity to pursue a rigorous research to settle the issue. No area of education provides a better scope for precise quantification of pupil behaviour than the area of achievement testing. Fortunately, India has a pool of highly competent scholars in this field who can unquestionably deliver the goods.

There are some other interesting hypotheses that need further investigation before a generalisation could be pronounced. They are: (1) Is the achievement better if the pupils are taught by a generalist teacher or by a specialist teacher? (2) Does possession of textbooks by a child enhance his/her achievement? (3) Is cognitive and scholastic achievement better in

children who have pre-school experience than in those who have not? (4) Is an adequate or a good infrastructure or educational facility an essential condition for better pupil achievement? (5) Is the traditional regular class system better than a multi-grade class teaching system for enhancing pupil achievement? This is not an exhaustive list of all possible hypotheses that can be generated or investigated from the studies reported here.

### *Affective Development*

Khadse, I.B. (1992) reported that the social development of rural girls was better than that of rural boys; but no such significant difference was evident between urban boys and girls. Nandede, G.G. (1989) made a critical study of superstitions prevalent among primary school pupils of Nanded District of Maharashtra. His conclusion was that girls, rural pupils and the children of illiterate parents and peasants were more superstitious than their counterparts. Chhabra, P. (1992) reported that size of the family, qualifications and employment status of both parents were the determinants of moral problems faced by primary students. She also found that those students, who had high moral judgment ability, faced more moral problems as compared to those who possessed a lesser level moral judgment ability.

### *Trend*

The main curriculum objective is to help the total development of the child, i.e., Cognitive, Psycho-motor and Affective, or Mental or Intellectual, Physical, Social, Emotional and Spiritual. Differently put, the school should aim to deliver the total curriculum that enables the child to develop all the faculties or the potential in all aspects of human life. Primary school children are at that tender age of life when they get either properly moulded or remain disadvantaged or without the benefit of the development all through their life. It is for this



precise reason the world community is doubly committed to provide equitable opportunities to all children to grow and develop fully.

As can be seen from the meagre number of studies on the aspects other than the academic or cognitive ones, the trend and the gap in research are clear, that is, attainment as a deliberate consequence of curricular intervention in the psycho-motor and affective aspects of personality has been utterly neglected. It is common knowledge that instead of the delivery of the total curriculum, more often than not, the school delivers a truncated curriculum, over emphasizing the attainment in the so-called core academic subjects, i.e. language, mathematics, science and social science. It is a paradox that the other subjects like work experience, arts education (Crafts), music, fance and physical education are called extra or co-curricular subjects, thereby reducing their importance and, consequently, undermining the very growth and development of the child's total personality. This stark fact was recognised by the delegates of the Regional Workshop held at Tokyo under the joint collaboration of NIER and UNESCO, Bangkok. The following excerpt from the Workshop Report clearly indicates the position on the subject as well the concern for it:

This book has been written for three main reasons. First, because so many children are failing to cope with the demands of and stresses of our rapidly changing modern world. *Second, because over the years school curricula have become excessively and aridly academic at the expense of social, moral and personal values....*

The book focuses on the 'affective domain' — a domain of education where feelings and attitudes come into play. However, it is a domain of education not very well understood because its boundaries are poorly defined, its territory only tentatively and partially explored; yet its importance has been stressed in the world's great religions and emphasised, time and time again, by great philosophers and teachers.... (UNESCO 1992)

Recognising this fact, the National Policy on Education (NPE), 1986 clearly described the *common core values* that ought to be inculcated

in every Indian child during her/his schooling. The quote is as under:

The National System of Education will be based on a national curricular framework which contains a common core along with other components that are flexible. The common core will include the history of India's freedom movement, the constitutional obligations and other content essential to nurture national identity. These areas will cut across subject areas and will be designed to promote values such as India's common cultural heritage, egalitarianism, democracy, and secularism, equality of sexes, protection of environment, removal of social barriers, observance of the small family norm and inculcation of the scientific temper. *All educational programmes will be carried on in strict conformity with secular values....* (MHRD, 1986.)

In spite of such a clear-cut resolution stated in the NPE, 1986, its implementation has been ignored. The new document on MLL has included only three basic subjects, leaving out other subjects predominantly related to the affective domain.

Returning to the review of research, is it not a sad commentary that the researcher had not conducted a single study on the burning educational policy issues that compelled the country to undertake the exercise for developing a new education policy in 1986? The absence of research clearly indicates that the researcher has hardly taken any notice of the NPE, 1986 and its major recommendations. The author feels, rather strongly, that the gap between research and policy development has remained as wide as has ever been and the policy-related research has neither received due attention nor the policy makers seem to be interested in using research or developing policy on the basis of hard facts. Rarely does one witness a concern about the contribution of primary education to the affective development, although all psychological theories, irrespective of their different shades, agree that young age is the most opportune time for inculcating permanent habits and values in children.



### Development and Transaction of Curriculum and Curricular Materials

Batra, P. (1991) conducted a small socio-psychological study using an alternate curriculum for Classes I and II in Betul District of Madhya Pradesh. The results were mixed. Some important findings were: (1) The processes of the child's thinking and learning are universal and yet culture specific; (2) The control group (although exposed to the traditional curriculum) showed significant improvement over the base-level in the abilities to classify and reclassify; (3) The control group reflected a better ability to recount number names whereas the experimental group could do the same in the functional sense; (4) The drawings made by the experimental group resembled the 'stereotypes' and represented human and other figures. On the other hand, most of the children in the control group tried to convert three dimensional images on to a two-dimensional surface; (5) The experimental group demonstrated a better ability to decode words and, therefore, a better degree of phonetic awareness in reading and writing spoken words; (6) Both the groups, however, could conceive length and mass with ease but the task of number conservation was difficult for them. Chhabra, P. (1992) developed a moral education programme (MEP) to study its effect on non-scholastic aspects of the learners' behaviour. With respect to the MEP intervention, he found no significant difference on the moral judgment and moral preference abilities of boys and girls. Gandhi, N. (1991) made a study of the sexist bias in primary school textbooks prepared and prescribed by the Tamil Nadu Government. The conclusions were: (1) Significant differences did not exist between the distributions of male- and female-centered (a) poems in the Tamil textbooks, (b) lessons and pictures in the English textbooks, (c) occupations in the mathematics textbooks, and (d) lessons and occupations in EVS textbooks; (2) However, significant differences existed between the distribution of male-centered and

female-centered (a) lessons, pictures and occupations in the Tamil textbooks, (b) poems in the English textbooks, (c) figures in the mathematics textbooks, (d) lessons and pictures in the EVS (science) textbooks and (e) in pictures and occupations in the EVS (Social studies) textbooks. Hassan, A. (1992) studied the problems relating to the availability of textbooks to primary school children in the districts covered under the Bihar Educational Project. His findings were: (1) The availability of textbooks differed from one district to another, Ranchi being placed in a relatively better position; (2) A greater number of children in rural areas used the second-hand source of procuring textbooks than those in urban areas; (3) Parents were satisfied with different aspects of textbooks but complained that the booksellers compelled them to buy 'keys' along with the textbooks. Pore, S.K. (1991) investigated the problems of preparing timetable in primary schools of Pune. The findings were as follows: (1) Municipal schools worked three hours a week more than private schools (45 against 42 respectively); (2) The languages, mathematics and English not only got the prime importance but also got the place in the first half of the timetable; (3) Because of the shift system, the mornings shift largely comprised 4.45 hours whereas the evening shifts consisted of 5.40 hours. The massive innovative project undertaken by the NCERT was primarily the development or renewal of curriculum and curricular materials and their subsequent experimental transaction before the final dissemination or diffusion or integration in the regular primary education system. An indirect inference can be made from the results reported by Dave, P.N. (Project PECE 1988), Bhattacharya, S. (Project NHEES 1991) and the NCERT (NFE Scheme 1986). Also see the results reported under "Learning Achievement—Cognitive" above. The renewed curricula, curricular material and their transaction in schools had a positive impact in most states. Simply put, a large number of children in



### *Teacher Traits*

Gonsalves, F. (1989) studied the job satisfaction of primary teachers of Vasai Taluka in Maharashtra. The conclusions drawn were: (1) Less than 50% of the teachers were satisfied with their job; (2) The reasons for dissatisfaction were transfer to remote places, assignment of tasks such as family planning, survey, preparation of electoral roles, etc.; (3) Despite these, they were interested in teaching but lack of reference books, audio-visual aids, etc., hampered their work; (4) They expressed satisfaction with respect to the NPE, teacher-administration relationship, teacher ethical values, available time and teachers' service conditions. Srinivasan, V. (1992) studied the personality traits of primary school-teachers of Cuddalore Educational District in Tamil Nadu. He found that: (1) Age, sex, experience and community did not affect the attitude of teachers towards teaching; (2) Government-school-teachers differed from aided-school-teachers with regard to the attitude towards teaching; (3) Significant differences existed in some traits between men and women teachers (lack of empathy), government-school-teachers and private-school-teachers (empathy and neuroticism), teachers from the forward and the backward/Scheduled Class communities (pessimism) and teachers having long and short period of service (self-confidence, dogmatism and need for achievement).

### **Teaching Strategies**

Sinha, S.P. (1992) reported the use of positive reinforcement in managing students' behaviour. The findings were as under: (1) Corporation- and public-school-teachers did not differ in the use of positive reinforcement technique in managing students; (2) However, public-school-teachers showed greater awareness and appreciation of the role of this technique than municipal school teachers; (3) Public-school-

teachers were more likely to apply the technique of reward and punishment in managing the classroom behaviour compared to corporation teachers.

### *Trend*

One and all, expert and common men agree that the teacher is the key element or the most critical element in the delivery of the curriculum. With all the elements of education, i.e., plan, curriculum, materials, evaluation in a top gear, if this key factor fails to deliver, hardly any change takes place either in the learner or in the system.

There has been persistent criticism that teacher education has not been effective in preparing teachers for the task and whatever education or training is imparted to the teacher does not seem to be need-based, for teachers generally do not apply them in the regular classroom. The studies reported in this section also support the above contention. While the long pre-service appears to be ineffective, short task-related in-service training like that given through the PMOST or OB programme, is not only found useful by the teachers themselves but it also rated to be effective when externally evaluated. This problem gets further confounded with absenteeism and low motivation of teachers. On the one hand, so many teacher-training models have been developed on the assumption that the teaching methods are essential, while the findings pile up to show abysmal use of the same in the regular classroom on the other hand. Although it sounds rather quite drastic, the whole question of the pre-service or in-service or internship-based training, or for that matter, any other, needs to be investigated to see the cost-effectiveness of the inputs and outputs of various teaching models. While undertaking such research, the design should be so developed that the effect of certain selected teacher traits could be partialled out.



In the end, it is reiterated that large investments were made (and are being made) in the orientation programme like PMOST. While the evaluative research done in this respect by the NCERT is a good beginning, the states should complete the evaluations of this programme to find out its impact for taking further policy decision.

### **Management, Administration and Supervision**

In the study of Punjab State by Birdi, B. (1992), the findings were as follows: (1) Since Independence, the methods and procedures of supervision and inspection had not undergone much change; (2) The work of the inspecting officer had increased without any corresponding increase in the strength of staff; (3) The State Plan did not make adequate provision of the funds for improvement of administration and inspection, and when the funds were allocated, they became the first victim of reduction. Mohanty, K.C. (1991) conducted an investigation into the efficiency of the system of supervision of the UEE programme in Orissa. The findings were: (1) The supervisors did more para and non-academic work; (2) Their number was insufficient; (3) Though the government required them to do extension work, it neither made the provision for their normal TA nor for necessary facilities; (4) The D.I. of schools had less control over the supervisors; (5) There was political interference in the administration of elementary education. Sharma, A. (1992) reported that: (1) The provision for the supervision of NFE centres at the regional and district level was inadequate; (2) The attitude of supervisors was supportive in 56% cases, indifferent in 36.67% cases, and even obstructive in 7.33% cases.

### **Community Participation**

Sharma A. (1992) reported a lone finding on the community support, i.e., the attitude of the community was supportive only in 40% cases; the majority was indifferent; and 6.67% of the

community members were obstructive.

### **Expenditure on Education**

Birdi, B. (1992) reported that the yearly percentage expenditure on primary education in Punjab increased from 20.5% in 1947-48 to 36.18% in 1980-81 of the expenditure incurred on education. Naik, S. (1992) reported that the average expenditure per student on primary education in Sundargarh District of Orissa was Rs.254.48 in the 1980s. The average non-teacher cost was 1.02% of the total expenditure on education. Padhan, A. (1991), who did an in-depth cost return analysis of primary education in Sambalpur District (Orissa), disclosed that: (1) The major expenditure came from the government while the minor expenditure was incurred by the students; (2) Of the total resource cost, the social cost consisted more as compared to the students' incidental cost; (3) On an average, 31% of the resources were wasted due to drop-out and stagnation. Ralte, L. (1992) revealed that in Mizoram, the expenditure on education as a proportion to the total UT's revenue expenditure declined from 18.2% to 15.2% between 1972-73 and 1985-86. The allocation to primary education as a proportion to the total educational outlay came down from 36% in the Fifth Plan to 12% in the Seventh Plan (1985-90). Further, the non-teacher cost per pupil was about Rs.27 in 1985 but increased to Rs.75 in 1986-87.

### **Trend**

It is rather difficult to surmise a trend from the very small number of studies in the areas of *expenditure, management and community education*. Some of the hypotheses that should be investigated with respect to these areas could be: (1) What percentage of fund allocation to primary education could be optimum in terms of the input-output ratio? (2) What are the real administration and managerial bottlenecks or



failures that come in the way of utilising the funds and blocking the benefits to real beneficiaries? (3) What are the critical components of success or failure of the education programmes implemented by the NGOs with active community participation? (4) Why is community participation not picking up in spite of a palpable demonstration of its success? Many vital questions regarding these areas remain unexplored. If it is left to the individual researcher, it is feared that not much research would come up in the next survey. The NCERT is an apex body. Quite a number of priority lists for embarking upon research have been developed during the last few years. They have to be acted upon. Someone, somewhere and at sometime, will have to take up research area by area and develop a macro design that may then be assigned to various institutions for meticulous collection of relevant data. The strategy of collection of educational statistics and education research abstracts that the NCERT has so successfully used for more than three decades, can be effectively used in farming out issue-based research in the country.

### Miscellaneous Results

There are a few results which do not seem to fit into any of the classifications made here and, therefore, need to be discussed under this section. Anand, P. (1988) undertook a study to explore relationship between parenting and deviance in primary school-children. The conclusions arrived at were: (1) While high-caste parenting was positive, SC parenting was negative in procuring love, encouragement and acceptance; (2) High-castes parenting of low economic status and SC parenting of high economic status was positive; (3) High economic status promoted positive fathering but demoted positive mothering; (4) Deviance in school was clearly a carry over phenomenon of faulty parenting. Rawat, G.S.'s (1987) study revealed: (1) The regular students perceived the school climate more positively than the

absentees; (2) The male and female regular students perceived the school climate more positively than their counterpart absentees. Sarma, H.N. et al. (1992) reported that: (1) The Assamese children preferred to learn English (21%), Hindi (25%), mathematics (12%) and science (15%); to read books (41%) and newspapers (74%); to be teachers (38%), doctors (17%), engineers (12%), pilots (3%) and electricians (6%) or take up miscellaneous jobs (5%).

### Innovations

Since the launching of the First Survey in Education, this is for the first time, even in the title of the survey itself, that the NCERT has inserted *Innovations* as a part of the review of research. Notwithstanding this right recognition of the legitimate place of Innovations (since the objective of the Educational Research and Innovations Committee (ERIC) puts equal emphasis on R&I.), it will not be meaningful if a separate section is not devoted to it in each of the chapters or to whichever research area it is relevant to. The author believes that the criteria of reviewing research will have to be modified, for innovations are not merely research but far more than what is ordinarily implied by R&D. The best approach to review some important small and large innovations undertaken in the country is to lay down a set of criteria. Before starting the discussion, it is necessary to clarify that the author does not intend to restrict the discussion to those innovations that have been carried out only during 1988-92. Since this is the first time they are being separately discussed (at least the author believes so), it will be immensely useful if the scope of discussion is enlarged.

Someone has remarked that India has a mine of educational innovations. If one happens to identify an innovation, it is better to check the Indian list first, for one is likely to find it in one form or the other existing in the South



Asian continent. The author had a privilege of being associated with the long exercise of developing, implementing and evaluating innovative projects at the primary stage for more than a decade in India. He had also helped MHRD bring out a directory of innovations in 1986. In this section, he intends to review the scenario of the educational innovations developed, planned, implemented and evaluated during the last two decades. Moreover, he intends to identify common conceptual and operational features, and formulate criteria for reference to review some significant innovations.

In the 1970s, the country saw the planning of massive innovative projects with the assistance from international agencies like UNESCO, UNICEF, SIDA, the British Council and some others in the primary sector. The NCERT acted as the technical advisory agency at the centre and, generally, the State Institute of Education (SIE), the State Institute of Science Education (SISE) and the State Council of Educational Research and Training (SCERT) at the state-level for planning and executing these projects. The partnership between the NCERT and the state-level agencies is still continuing as the implementation of innovative projects is on the increase in view of the urgency of achieving the goal of UEE by 2000.

It is extremely important to record here that the government was not the only catalyst in generating innovations. An umpteen number of Non-Government Organisations (NGOs) or Voluntary Agencies (VAs) were active in working out different models based on their distinct identity and philosophy. They may be even more successful in effective implementation of innovations. This is neither the place nor the appropriate time for undertaking a detailed discussion of innovations. However, there is paucity of information, particularly in the form of hard facts and figures for assessment and comparison. Therefore, the author will confine his attempts to deriving a set of criteria and, if possible, a framework while describing some

important innovations undertaken during the last two decades, *for which substantial documentation is available*. Some of the important innovations or innovative projects launched in the 1970s and which continued until 1992 were as under:

1. Science Education Project (SEP, 1962)
2. Primary Education Curriculum Renewal (PECR)
3. Developmental Activities in Community Education and Participation (DACEP, 1975)
4. Children's Media Laboratory (CML, 1975)
5. Project Nutrition Health Education and Environmental Sanitation (NHEES, 1975)
6. Comprehensive Access to Primary Education (CRC, 1983)
7. Early Childhood Education (ECE, 1982, being an offshoot of Project CML)
8. Area-Intensive Education Project for Human Resource Development (AIEP, 1986)
9. Integrated Education for the Disabled (IED, 1986)

During the Fifth Five Year Plan (1974-78), the Government of India launched a National Programme of Minimum Needs (NPMN) which aimed at delivering in a complementary fashion 'minimum basic service', particularly to cater to the needs of the deprived sections of the population. Along with health, nutrition and environmental sanitation, Elementary Education (EE) was accorded prime importance in the scheme of educational planning in the country. Government of India of its own also launched some important projects that could easily be labeled as innovations. They were:

1. Experimental Projects for Non-formal Education for Children (NFE, 1984)
2. Programme of Mass Orientation of School Teachers (PMOST, 1986)
3. Operation Blackboard (OB, 1989)

#### *Genesis of the Innovative Project*

The first question that one would like to start



with is, what is innovation or what is the definition of innovation? The second, why should one undertake an innovation or an innovative project? The thesaurus provides some clue by giving close words and synonyms of innovation. They are: alteration, change, modernisation, novelty; establishment, institution and introduction. These all strongly indicate that the genesis of innovation is when an individual, an institution, an agency or a state feels the need for *Change*, for things seem to have become static, non-productive, inefficient, or in a nutshell, the returns from investment—financial or human resource—are mismatched or even negative. Innovation is then a search for alternative ways or means for performing the old task more efficiently, more productively and more cost-effectively. Differently put, it is the search for conservation of scarce human and material resources. In that way, modernisation seems to fit tightly into the schema or framework. One may deduce from the above discussion that the ultimate criterion for evaluating an innovation or an innovative project will be to search for hard evidence as to whether (1) It provides a better alternative to the previous or older one, and (2) The older one is widely adopted or replaced by the new or proven one.

Since innovation implies a changed way, means or mode of looking or thinking, it will certainly have a set of definable, operational and attainable outcomes. The sub-set of criteria then would be the objectives or outcomes of the innovation. It will be the right thing to examine the major objectives or outcomes of the above-mentioned innovative projects and then assess whether the project evaluation reports present evidence for or against each of the objectives. The author is quite aware of the fact that the abstracts of innovations do not contain adequate information—facts and figures—to arrive at any definite conclusions. This at once suggests the need for a different kind of proforma for obtaining information relevant to evaluation of innovative projects. Since these projects were large and comprehensive, took a long span of

time for completion, involved a large number of personnel, and required a huge amount of funds, it is but natural to expect continuous collection of meticulous information on critical components and at critical times. One would fear an enormous loss of information in a post-facto evaluation like this. All the same, this kind of exercise is extremely important and worth undertaking. The NCERT possesses some excellent directories of innovations, an in-depth analysis or critique of which could have served the purpose better. Anyway, an attempt such as this, however crude and primitive it might appear, would help generate databases and, as a result, would help derive meaningful and valid conclusions about educational innovations, since innovation will never cease to be undertaken. Reverting to the main focus of this section, the author intends to critically examine some selected innovative projects to identify some criteria for evaluating their success or failure.

#### *Summary of Salient Points including the Objectives or Outcomes of Selected Innovative Projects*

The author has already discussed the results of some of the innovative projects, namely, PECR, CAPE, NHEES, NFE, PMOST and OB under appropriate areas above. He would like to probe further the results and other relevant details from the point of view discussed a while ago.

##### *1. Science Education Project (1962) :*

According to the UNICEF-Government of India Master Plan of Operation (1974) the objective of this project was to complete the preparation of the Primary School Science curriculum materials with expansion to include health, environmental sanitation, nutrition and child care as part of the curriculum;

##### *2. Project PECR aimed at:*

Renewal of the primary education curriculum, i.e., Classes I-IV or V, i.e.,



- (a) Formulation of suitable objectives, (b) Development of innovative curricula and (c) Development of suitable instructional materials for the child.

The project document further stated:

Through operational research this project will determine the relevant curriculum and instructional materials for primary stage of education. Each of the states participating in the project will be able to develop curriculum plan, syllabi and instructional materials suited to the needs and aspirations of the people.

3. *Project DACEP aimed at:*

Through Project DACEP, the States will be able to evolve a variety of modules of non-formal education for the education of the communities. (PCDC 1977)

4. *Children's Media Laboratory Project:*

The major objective of establishing Children's Media Laboratory Project was to develop and discover inexpensive, non-formal and effective media of enrichment and entertainment value for the children in the age-group of three to eight years. (UNICEF-Government of India 1974, pp. 324).

5. *Project Nutrition, Health Education and Environmental Sanitation:*

The major objective of Project Nutrition Health Education and Environmental Sanitation was to develop need-based decentralised curriculum process and content that would help retain a large number of children who otherwise would have dropped out. This broad goal was broken down into operational outcomes as follows:

- (a) Plan and preparation for the execution of the project by each of the participating states;
- (b) Conduct the survey to find out the needs, habits and problems related to nutrition,

health and environmental sanitation of the community;

- (c) Development of a curricular package of material for teachers and pupils on the basis of survey data, involving teachers and other experts and field personnel;
- (d) Orientation and training of project personnel;
- (e) Try-out of these packages in schools;
- (f) Monitoring and evaluation of the project at every stage.

6. *Comprehensive Access to Primary Education (1983):*

The document Comprehensive Access to Primary Education (CRC 1983) describes the long-term and short-term objectives as follows:

- (a) To develop a non-formal system of education and to increase the number of children, especially those belonging to the disadvantaged sections of the society, participating in non-formal education activities organised as an alternative to formal schooling;
- (b) To evolve flexible, problem-centered and work-based decentralised curricula and learning materials relevant to the needs and life situations of diverse groups of children, not only for non-formal but also for formal channels of education.

The following four sub-objectives were also parts of the major objective:

- (i) Development and try-out of learning materials (episodes).
- (ii) Introduction into the curriculum of elementary teacher training institutes or into the in-service training programmes of primary school-teachers, of a training-cum-production mode for providing experience of developing curriculum materials and for generating a source of learning materials for education of out-



of school children.

- (iii) Establishment/adoption of learning centres which will provide accredited education to those children in the target group.
- (iv) Establishment of evaluation centre and accreditation services for evaluation and certification of learners enrolled in the learning centres.

#### 7. *Early Childhood Education (1982):*

The aims of Early Childhood Education (ECE, 1982, being an extension of Project CML) were similar to those mentioned for the other forerunner projects: Development of media (playway and/or learning) materials, establishment of pre-school centres, training of different levels of personnel, increase in the participation of early age children in learning activities, facilitation of their continuation in primary education later and monitoring and evaluation of the project implementation.

#### 8. *Area-intensive Education Project for Human Resource Development (AIEP):*

This was an eclectic integration of all the objectives stated for the innovations mentioned above.

#### 9. *Project Integrated Education for Disabled:*

While the target group of Project Integrated Education for Disabled (PIED) was disabled children of the primary-school age, the objectives, strategies, curriculum development, training and monitoring and evaluation were quite similar to those mentioned for other projects.

As regards the Government of India's projects, the objectives and other components of the Experimental Programme of Non-formal Education (NCERT, 1982) and the Scheme of Non-formal Education (MHRD, 1988) were similar to those of Project CAPE since they were

two sides of the same coin. The author has ventured to call the Operation Blackboard and Programme of Mass Orientation of School Teachers (PMOST) as innovations although their nature, scope and objectives were quite different from the other curriculum-cum-training-evaluation-specific projects. Nonetheless, since the schemes' primary objective was change or alternate arrangement or modernisation of some elements of the primary stage of the educational system, and since they invested huge financial and human resource inputs, they deserve to equate with the innovative projects.

A critical examination of objectives and strategies of implementation and evaluation of these projects helps us derive the following criteria for judging the success or impact of the innovative projects:

#### *General*

1. Are hard data (concrete evidence) available for judging the success or failure of the innovative project?
2. Assuming that the innovation or project was a success, was the old process or product or whatever was the target of change, replaced by the new one on a wider scale? Differently stated, what were the magnitude and rate of dissemination of the new one?
3. Were all objectives achieved?
4. Was the innovative project completed within the time-frame and within the estimated budget?
5. Were all components monitored, evaluated and action taken in time?
6. What were the reasons for failure to achieve the targets or outcomes of the innovations?

Since all the innovative projects were launched in the context of UEE, the following specific criteria or indicators will be kept in view while judging their success or failure:



*Specific*

- Increase in enrolment of children;
- Increase in retention, attendance and participation of children;
- Enhancement of pupil achievement;
- Discrepancy between the targets set and those achieved with respect to:
  - Number of teaching materials developed
  - Number of learning materials developed
  - Number of personnel trained
  - Percentage utilisation of allocated budget.

*Trend*

This area is so vast and as can be seen from the comprehensive coverage of each of the innovative projects, it is rather difficult to do full justice to it. Further, the extreme paucity of information, both due to non-availability of information and the somewhat standard format of the abstract that has been used to collect information, severely restrict the scope of the discussion and any reflection that the author could make. Nevertheless, the author believes that the information provides enough ground to draw some lessons and identify some general trends. If there is any lapse or error in doing so, the author will readily own it. When the author has been working in the field for a long time and has accumulated and internalised wide experience, some judgments are bound to be coloured, if not biased. This may occur in spite of using a list of external criteria or a framework. Just the same, the author has made conscious efforts to base his judgments on the basis of evidence, especially the quantitative ones.

*Criterion 1: Are hard data (concrete evidence) available for judging the success or failure of the innovative project?*

How would the innovative projects fare against this criterion? It is necessary to recall that monitoring and evaluation was supposed to be a built-in part of every project. Generally, the experience in this regard, not only in India

but also in other developing countries, is unsatisfactory. The hard facts and figures — overall and on a number of components — are usually neither collected systematically nor analysed periodically to make so-called mid-course corrections. As a routine, mostly belatedly and even sometimes in the face of reluctance of the project staff, and international expert or a premier agency or institution—a private firm or university or a renowned expert—is engaged to undertake the evaluation. Most of such evaluations are impressionistic and rarely contain hard facts. To quote the experience of the NCERT projects, each one of them needed rigorous evaluation at least at the end of each Five Year Plan since they formed part of the educational objectives. As the long gestation and duration of most of the projects indicate, i.e., 10-20 years, no single periodic evaluation is evident on the basis of which Government of India or UNICEF took a decision of continuation or discontinuation of a project.

True, sporadic review meetings at the state and regional levels and regular annual meetings at the national and international levels are held. Still, these are routine meets. The partners of the project do not care to generate quantitative data, except for the percentage of utilisation of funds earmarked for the project.

When the author talks about the overall data, he means data related to the total project. For illustration, the major goal of the primary education innovations, all without any exception, was to help universalise elementary education. The concrete evidence should be in the form of hard facts and figures with respect to specific indicators—enrolment, retention and achievement of pupils, suggestive of a positive, progressive movement towards the cherished goal of UEE. In this context, the most dispassionate answer to this criterion question is: 'No'.

*Criterion 2: Was the old process or product replaced by the new one on a wider*



*scale? Differently stated, what was the magnitude and rate of dissemination or diffusion of the innovation?*

If this criterion is applied, the brutal fact of the matter is that education innovations present a woefully dismal scenario. On this point, one can seek answers to questions specific to each of the projects. Leaving aside the big question of availability of reliable and valid data supporting the relationship between the new curriculum (a sub-innovation) and pupil development, one may raise a query, how many participating states truly adopted the curricular materials produced under Projects NHEES, PECR and CAPE? Bhattacharaya, S. (1991) provides an evidence-based answer for Project NHEES. In 1984, none of five states, which launched the project between 1974-76, took any action for dissemination or even integration of curricular materials/syllabus into the existing state primary school curriculum. The story of other states, which started the project in 1982, was not different when the impact study was completed in 1991. Project PECR had some success in changing the curricula in states like Rajasthan, Himachal Pradesh, Tamil Nadu, etc. Nevertheless, the project envisaged different sets of textbooks within the state based on locally specific content derived from the initial surveys. For example, a state like Gujarat could have developed textbook versions reflecting the learning needs of children in the desert area (Kutch), the coastal area (Saurashtra), industrialised areas (Vadodara and Ahmedabad), tribal areas (Sabarkantha, Surat and Dang) and the hilly area (Panchmahal). It is conceptually a grand idea, but is it a feasible one? The fact of the matter is that no state, after a decade's experimentation, has implemented even two sets of textbooks, one for the rural and the other for the urban areas, keeping aside the production of multi locally-specific textbooks relevant to diverse groups of learners. In this respect, Project CAPE fares the worst. As a project

coordinator, the author failed to sell to even one needy educationally backward state the learning package of three basic subjects, Hindi, mathematics and EVS, of 1,200 learning hours, covering the syllabus of the primary stage. The self-paced learning modules, developed and produced with the assistance of the states themselves, could not be given to the children of the poorest of the poor population, although the states, at that point of time, did not have the necessary learning material in any form. For reasons known to them only, the process of re-inventing the wheel has started again in the 1990s. Can there be a more glaring example of wastage of enormous financial and human resources? The precious time and talent of scores of academics at the NCERT and the SCERTs was consumed fruitlessly. A resounding failure of innovation indeed!

As can be seen from the statements of the project objectives, each project was not just a single innovation; it was a complex mosaic constellation of innumerable innovations. May be the innovation being too complex in itself was the cause of its failure. No scientist would dare to undertake a research with such complexities. The complexity of phenomena also acted as a deterrent to generate and capture supportive data, especially the quantitative data, on a continuous basis. This makes it necessary that sub-components or micro-components are researched further to identify success or failure.

If periodical evaluations, or evaluations at certain critical phases, i.e., the decision to repeat the innovation on a larger scale or to expand it to more areas or states, were not carried out, were at least any post-facto evaluations of the total project or component-wise evaluations conducted? Fortunately, the answer to this question is partly in the affirmative. It is not out of place to report here that as a coordinator of the above set of projects the author had the unenviable job to persuade the state authorities to integrate the successful experiences of the projects into the regular school system.



Strangely, the first question asked was whether there was any data supporting the effectiveness of the curriculum materials prepared under the projects. It is not an exaggeration to state that the genesis of starting the process of project evaluation lay in this intractable problem of convincing the new team of bureaucrats that there existed reliable and valid evidence in support of project teams' claim. Without ascribing any motive to such questions, the author considers it is the best encounter, for it compelled Government of India, UNICEF, NCERT and its allied agencies to seriously plan to investigate the impact of the long running projects. Of course, it is altogether another thing that the proof for success or failure made little difference in taking a decision to diffuse or integrate the innovative components into the regular system. The international agency(ies) too hardly care for data. Notwithstanding these mishaps, academically it proved to be an opportunity to do just the right thing. In 1984 and 1987, the NCERT meticulously planned the impact studies on Project PECR and NHEES. The CAPE team also designed a similar study to evaluate the impact of CAPE. Besides, the NCERT and the NIEPA planned a comprehensive evaluation of the NFE scheme. The outcome was the three most comprehensive evaluation reports on the three most important innovative projects. The published comprehensive document, the impact study on Project NHEES, is extremely helpful to the reviewer (Bhattacharya, S. 1991). So are the comprehensive overall and state-wise evaluation reports of the NFE Projects by NIEPA (Administration aspect) and NCERT (Academic aspects) (NCERT 1986a). It will indeed be worthwhile to look into these reports keeping the specific indicators in view.

The evaluation of Project PECR aimed at getting answers in terms of increase in enrolment, retention and academic achievement of pupils in the states. It also obtained the pooled sample data representing a national scenario. Unfortunately, all but pupil

achievement data were destroyed in a devastating fire. However, the pooled national means of pupils in Language (except in Class I), mathematics and EVS in Classes I-IV of the project schools were greater than those of pupils of non-project schools, thereby lending support to the effectiveness of the renewal process of primary curriculum in the participating States. The overall means also showed that the achievements of pupils in these subjects were very good (in the range of 55.22%-73.23% in all the three subjects) in Classes I and II, while those in Classes III-V were nearing the pass marks necessary for promotion to the next class (in the range of 32% - 51% in all the three subjects). It is heartening to note that the concept of *Minimum Learning Continuum* generated by the project found its way into the National Policy of Education-1986. The results of the Project PECR became the basis for formulating the minimum levels of learning at the primary stage. One should consider this as an extremely important event of dissemination, since it got fed into the regular primary education system of the country and states/UTs. The joint evaluation of the NFE scheme by the NCERT and NIEPA (NCERT 1986a) arrived at the following encouraging conclusions: (1) The non-formal system had established itself well in spite of a number of academic, financial, organisational and administrative bottlenecks, as 240 out of 241 districts in the educationally backward States were covered; (2) As compared to the formal schools, enrolments of learners had increased remarkably in the non-formal centres; attendance was about 75% and the drop-out was only 21%, compared to 28% in the first year and 56% at the end of the fifth year in the formal system; (3) Cumulatively, the achievement of children in NFE centres was only marginally inferior to that of children in the formal system. These results have surprised one and all, for the conditions in NFE centres have been far inferior to those prevailing in the formal schools.



*Criterion 3: Were all objectives achieved?*

The author has mentioned about the complexity of innovative projects, and how the complexity itself acted as deterrent to the possibility of collecting hard data. The roots of complexity lay in the too broad long-term objectives. Most of them were addressed to a change in the total education system. As one can see from the projects described above, some of the objectives look far more ambitious than those existing in the regular programmes. A few examples are given below:

1. To develop a non-formal system of education or to establish an evaluation system and accreditation services for certification of learners enrolled in the learning centres (CRC, 1983);
2. The longer term objective is to increase the meaningfulness of existing primary education through gradual infusion of innovative ideas tested in the experimental education programmes (PCDC 1977);
3. To test whether by removing the dichotomy between school and community the former can extend its assistance to the latter so that the school may become a catalyst for social change in other sectors of the community (DACEP 1977);
4. To help them (the states) in developing institutional structures at various levels not only for quantitative expansion but also for the improvement of the quality of education (NFE 1982);
5. To achieve the planned convergence of all socio-economic and developmental inputs by the Central and State Governments and UNICEF, especially those relating to survival, protection and development of the child (AIEP).

Once a change in system is the objective, the sky is the limit to include anything and everything, thereby creating a labyrinth of sub-objectives such as increase in enrolment, attendance, retention, pupil achievement; conduct of surveys, analysis of data,

development of curriculum, textbooks, teachers' guides, supplementary materials, audio-visual media; evaluation tools/techniques; teacher education curriculum, teacher training materials, training and evaluation scheme for trainers and monitoring, evaluation and research. Only a few objectives, and those too to a very limited extent, were achieved. There would have been much better luck or success, had the implementation been restricted to a state or two. Political exigency demanded that the national projects must cover all states/UTs of the Union, which ensured failure from the very start, for it was like attempting to attain 31 sets of objectives at one and the same time. Not for a single moment did one raise a question as to whether a single institution can really manage to execute such a task! It should be considered a high degree of achievement that some projects could manage to capture a 10 to 20 year implementation into a compact study.

*Criterion 4: Was the innovative project completed in time and within the estimated budget?*

The answer is a clear-cut 'No'. There is a relationship between the poor utilization of funds and the duration of an innovation. On the one hand, so much funds remained unused while, on the other, the unfinished project activities lingered on and on, year after year. This has remained a paradox. Poor countries have hardly any funds for curriculum activities, as the lion's share of the allocated budget gets consumed by teachers' salaries and administration. At the same time, they are not able to absorb funds — outright grants liberally provided by the international donor agencies. This is equally true about the utilisation of the national funds. The implementation and completion of the NFE and OB schemes were inordinately delayed in spite of the availability of funds.

*Criterion 5: Were all components monitored, evaluated and timely actions taken?*



Direct quotations from documents provide the nature and idea of target set. A few such quotes are reported below for reference:

#### *Monitoring of the Scheme*

##### Central level

The NCERT will assume overall responsibility for the implementation of the scheme and will be responsible for general planning, coordination and overall evaluation at the national level.

##### State Level

The District Education Officer (DEO) would see that the whole educational system and personnel, viz., supervisors, training school staff and school teachers, contribute to the implementation of the scheme...

##### Evaluation

An in-built system of evaluation has been incorporated for this scheme...NCERT will also act and analyse the data on a national basis and be responsible for the final evaluation of the scheme (Bhattacharya, S. 1987).

These are excerpts from the project document of NHEES, but are applicable to every project. How has it worked? To what extent has it worked? What is the coverage of components? Again, an excerpt from the MPO, UNICEF-Government of India (1974-79) provides evidence of the gap found between the intention and the actual outcome of the very first project UNICEF supported in this country, SEP (1962). After 12 years, the specific objective stated was as under:

6.2 To determine the effectiveness of the Science Education Project (SEP) so that the teaching of science can be improved. Such an assessment will also provide information for use in future curriculum renewal efforts and contribute to an effective education programme. (Bhattacharya, S. 1991).

So, no effectiveness of the project was ascertained during the 12 long years of implementation. Did anyone act on this renewed objective? So far as the documentation goes, one is unable to lay hands on it, as one can on NFE and NHEES evaluation documentation.

All one can say is, 'Tragic!'. Before offering

massive funding again for a new set of large innovative primary education projects, it was obligatory on the part of the international agency to have insisted upon a thorough project evaluation of SEP so that the pitfalls in planning and implementing new innovative projects could have been avoided. The consequence was that the situation remained more or less the same until 1984, after another 10 years' gap! To be blunt, the status of a project or two suggests a 20-year gap!

The author earlier remarked that the D part of R&D was better attended to than the R part. If the time and expenditure are kept constant or ignored as critical factors, all the projects seem to have done well. Good quality training and learning materials in adequate quantity were produced. They were produced in different formats, i.e., textbooks, modules, capsules, packages, self-learning modules in episodic form, audio cassettes, video cassettes, science kits; mathematics kit, etc. A large number of academics assisted the NCERT and the SCERTs in developing these materials. Generally, they were rated highly both on content and printing. Notwithstanding the development, the evaluative part was only partially done. Whenever the tryouts were conducted, they were limited to teachers' opinion or perceptions.

The evaluation of the textbook as an effective tool of pupil learning was rarely, if ever, done against the criterion of enhancing pupil achievement. Even the impact studies of Project PECR and NHEES fell short of proving the effectiveness of specific component(s) of the project, i.e. textbook, learning material, educational facilities, training of teacher, supervision, etc. All they support is that the whole project or the composite project had a positive impact. Since the treatment and control groups were randomly selected, the influence of all other factors may be assumed to be equal in both the groups.

*Criterion 6 : What are the reasons for the failure*



*to achieve the targets of outcomes of the innovations ? the targets of outcomes of the innovations?*

In a way the points in the above discussions amply hint at the reasons for failure. However, the author had restricted the discussion to the project and project components. He had not touched upon other aspects or hidden elements that usually have had perhaps more adverse influence, than those operating within the project.

### *1. Owning of the Project*

The greatest failure of externally funded projects was their inability to become the country's own projects. Let me hasten to clarify that the external agency had little to do with creating such an impression. Nonetheless, the fact of the matter is that this impression stuck with every project. They remained, and will remain (strictly a personal opinion) as UNESCO, UNICEF, WB, SIDA projects, or whatever stamp of the external agency got stuck on it. The stark reality is that the innovative projects have failed to become Indian innovations. Similarly, more often than not, participating states/UTs did not own them as their projects either. In a sad manner, in addition they got converted as NCERT projects and, to some extent, SCERT projects to the grass-roots level functionaries like DEOs, BEOs, headmasters and teachers. The question is, whose felt need was it for the change in the existing system or curriculum or training or whatever one may like to call it? Who initiated the innovation? Whose idea was it? Why was it necessary to have the external consultant(s) associated throughout the tenure of the project(s)? If such a comprehensive change was envisaged in the country's system of education, was there a thorough discussion among the top academics of the country about the philosophy, design, scope, etc. of the innovation? Was it even done within the NCERT since it is common knowledge that the perceptions of the in-project personnel and the

out-project personnel were quite different. This was more true at the State, District and Block levels. It is the candid opinion of the author that an open debate on the innovation—from its philosophy to its dissemination—would have helped the process of internalisation and, therefore, owning it by all the field workers. Had this happened, perhaps the picture would have been different.

### *2. The Top-to-Down Planning Approach*

There is no denying the fact that it was more a macro level approach to planning and execution of innovation. Since the external agencies were involved, the procedure was a typical World Bank approach. The consultant's document and the agreement for the execution of the project document signed by the external agencies and the Central Government, became the Bible for reference. The complex jargon observed in the statements of objectives was the result of this no-return kind of situation. Although the external expert developed the document after reviewing the relevant country documents and having interaction and discussion with a wide cross-section of people, in essence it remained a macro document, a distant document; it was certainly not a document generated at the micro-level or with the involvement of micro-level field workers. It was more a handing over of a blueprint of fixed innovations from the central agency to the state agency, from the state agency to the district agency to the block agency to a village level school in respect of all aspects—planning, development of materials, training of personnel, and monitoring and evaluation. Therefore, the power and control remained more with non-academic bureaucrats whose interest was limited to checking with the in-project personnel whether the planned activity was completed on time and the funds earmarked were used fully. Enough evidence in all sectors exists to show that this hierarchical approach has not worked; and nor did it in implementing educational



innovations either.

### 3. *Provision of Internal Budget Personnel*

There were certain conditionalities, especially regarding the financial and human resources, to be met by the country. Even today, most of these conditionalities remain unfulfilled or, at best, are only partially or marginally fulfilled. In developing countries, especially those left with the legacy of foreign rule, financial rules and regulations or controls create real handicaps against the execution of project-related tasks. It is the author's opinion that availability of funds was never a problem. There were always more funds available than that the project personnel could spend. The problem faced was, how does one spend the fund under woefully rigid and strict financial rules? Figuratively put, a bird can, sometimes, somehow, escape from a cage but not even a single paisa can escape from the treasury of erstwhile foreign ruled countries!

The hierarchical nature of the administration, coupled with strict financial rules, hindered to a great extent the project execution. Rarely, the state governments created a budget head or advanced even token funds for incurring the counterpart expenditure. Classic examples are: (1) The external agency supplied costly equipment like electric typewriters, duplicators, overhead projectors, audio-video machines, etc. No sooner did the equipment arrive, many of them became idle because of faulty handling; (2) No matching budget provision for repairs and replacements was made in the state budget. If this had happened at the premier institution at the centre, it is anybody's guess what the plight of a poor village headmaster would be. It is no exaggeration to state that the offices of project personnel have accumulated plenty of such defunct equipment over the years, which cannot be even auctioned. Tons and tons of printing paper arrived at the ports as scheduled, but a large portion was destroyed or rotted in open

spaces because neither provision for freight charges was made to dispatch it to the state agency nor was the storage space available with it when finally the paper consignment arrived.

An equally hindering factor was inadequacy of personnel for execution of the project. Although the project document clearly describes the need for constituting a specific size of the project team at all levels of administration, the implementing agency never fulfilled this commitment. The problem used to get accentuated when the team members moved out of the project on promotion or transfer. The author can assert that rarely, if ever, there existed a full team at any level during the implementation of a project. The longer the tenure of the project was, the more plagued was it with this problem.

If one could quantify all these small but significant factors and partial out their effect on the indicators like enrolment and achievement of pupils, the ultimate criteria of evaluating project impact, the results will show an enormous success or a positive impact. As remarked by Bhattacharya, S. in respect of the impact of NHEES (1991): "*This data also strongly indicates that administrative and management problems overwhelmed the academically sound programmes, thereby ultimately deciding the success or failure of the innovative intervention*". It appears that the manager or administrator had all the power while the field worker had all the responsibility. The former had the responsibility to give quick decisions but the latter had no power to execute the task without the permission. Centralisation of power and decentralisation of responsibility just could not go hand-in-hand and deliver the goods.

### 4. *Production and Distribution of Materials*

The implementation of the projects demanded a variety of non-academic skills, textbook production in particular. The academic staff felt quite at home up to the finalisation of the manuscript of a teaching and learning material.



Nonetheless, the timely production and distribution of materials were altogether a different thing. While such expertise was available at the NCERT, no such expertise was available at the state level, particularly in small, remote and industrially less developed states like Nagaland, Mizoram, etc. The problems were virtually insurmountable, resulting in poor production and inordinate delays. Unfortunately, the local printers took advantage of the ignorance of the project team. The outcome was a much higher unit cost of material than that permitted under the rules since the required number of the printed materials was too small. Needless to mention, the classroom instruction suffered immensely when the children did not get the new textbooks at the beginning of the new academic session.

At the end, the author would like to admit it has not been possible to do full justice to this area. Yet, given the time, space and especially the availability of information, it has been possible to cover a fair amount of ground. Most important, a sort of criterion-referenced framework, however incomplete, has evolved. The author hopes more work on it may eventually help develop a full-fledged model of evaluating innovation. Doubtless, a number of issues relating to planning, implementation and monitoring and evaluation of innovations have emerged. These ought to encourage other scholars to take up a further in-depth probe into this complex, yet fascinating field. A little bit has been done, but much more remains to be done.

### CONCLUSION

In conclusion, the author would like to say that so far as the research in this area goes, the country is at the crossroads when every input will be worth the investment. The field of Management of Information System (MIS) is developing dramatically. In the frontline is business, which by its competitive nature, requires instant decisions that cannot be

had without the data-base. Such system developments are paying handsome dividends also. This is just not happening in the field of education in India. Bluntly put, both policy-makers and academics are shying away from using the research- and information-based decision approach to solving educational problems. The sooner it is realised that the time for making decisions on intuition and opinion is over, the better it would be for the future educational development of the country. In the ultimate analysis concrete developmental indices or indicators, in quantitative terms only, would tick. Answers to questions such as the following, in quantitative terms would be needed: How many two-room schools have changed to five-room schools? How many more women teachers have joined the teaching force? How many schools have adequate educational materials and have established a mechanism for continuous supply of good quality teaching learning materials to schools? Are all children in the age group of 6-11 years enrolling in primary schools in every habitation or village? Have they all completed the schooling within a five-year cycle? Has every child, irrespective of his/her caste, creed and race, achieved a defined minimum level of learning? Has every child felt that his investment of five years was worth the trouble? The only way to obtain answers to these questions is through systematic research and through creating efficient management information databases from the micro level up to the macro level. Surely, it will be wishful thinking if anybody hopes or believes that this could happen without the top policy-makers and academics of the country making a concrete plan for EFA.

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