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Draft for Discussion

THE DISTRICT PRIMARY EDUCATION PROGRAMME

BASELINE BENEFICIARY STUDIES

Training Needs and Motivation of Primary School Teachers

A SYNTHESIS REPORT

Presented in

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National Council of Educational Research and Training

New Delhi - 110 016

23-25 August 1994

District Primary Education Programme

National Seminar on Studies

(23-25 August, 1994)

Training Needs and Motivation of Primary School Teachers

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Acronyms

AIS	:	Administrator Information Schedule
B.Ed	:	Bachelor of Education
CERI	:	Centre for Educational Research and Innovation
DIET	:	District Institute of Education and Training
DPEP	:	District Primary Education Programme
DTESE	:	Department of Teacher Education and Special Education
ETTI	:	Elementary Teacher Training Institute
GJCE	:	Government Junior College of Education
GOI	:	Government of India
GSTS	:	Government Secondary Training School
IASE	:	Institute of Advanced Study in Education
MHRD	:	Ministry of Human Resource Development
MLL	:	Minimum Levels of Learning
NCERT	:	National Council of Educational Research and Training
NCTE	:	National Council for Teacher Education
OBC	:	Other Backward Caste
PMOST	:	Programme of Mass Orientation of School Teachers
SC	:	Scheduled Caste
SCERT	:	State Council of Educational Research and Training
SIS	:	SCERT Information Schedule
SOPT	:	Special Orientation of Primary Teachers
ST	:	Scheduled Tribe
STPQ	:	State Teacher Policy Questionnaire
TS	:	Teacher Schedule
TIS	:	Training Institute Information Schedule
TNA	:	Training Needs Assessment
UNICEF	:	United Nations International Childrens Emergency Fund
VE	:	Variation Explained

States

AS	:	Assam
HR	:	Haryana
KLA	:	Kerala
KTK	:	Karnataka
MHA	:	Maharashtra
MP	:	Madhya Pradesh
OS	:	Orissa
TN	:	Tamil Nadu

Districts

AUD	:	Aurangabad
BET	:	Betul
BLM	:	Belgaum
BPR	:	Bilaspur
DHPI	:	Dharmapuri
DRG	:	Darrang
GJI	:	Gajapati
HSR	:	Hissar
KANG	:	Karbi-Anglong
KSH	:	Krishnagiri
MAM	:	Malappuram
NAND	:	Nanded
RCHR	:	Raichur
RTM	:	Ratlam
RYD	:	Ryagada
SAR	:	South Arcot
TKM	:	Tikamgarh
WYN	:	Wayanad

Training Needs and Motivation of Primary School Teachers

Schools do make a difference in student achievement¹. The level and quality of student achievement depend on what goes on in schools and classrooms. This brings the teacher to the centre stage of school effectiveness. Teacher quality is critical to achieve school goals. It is the outcome of dynamic interaction of teacher competence and motivation of teachers to transform competence into performance. Education and training build teacher competence, while service conditions, school climate and community environment guide motivation of teachers. The process of training and support also contributes to teacher motivation to some extent².

Teacher commitment to perform is significant. In the affective domain it starts from willingness to respond to a situation and through a series of steps, it becomes a professional value³. What is the dynamics of this becoming? What motivates teachers to acquire this value? What can be done to facilitate the process? Do states have policy to attract competent and motivated teachers? How are teachers recruited? Are service conditions conducive to retain good teachers? Do these sustain motivation throughout the career? Research on school effectiveness, teacher effectiveness and career satisfaction explore these questions. This research has yielded several variables of consequence which have policy implications for investment in teacher quality.

A recent CERI study on teacher quality provides an appropriate conceptual framework for linking teacher policy contribution (initial education and training, inservice education and training, teacher appraisal, alternate paths to teaching, alternate teaching careers, incentives to enter the teaching profession and incentives to remain in the teaching profession); context of schooling (education system policies, local policies and strategies,

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- ¹ Lockheed, ME and Longford, NT (1991); School Effects on Mathematics Achievement Gains in Thailand. In Stephen W. Rauden Bush and J. Douglas Willms (Eds.). *Schools, Classrooms and Pupils*, Academic Press, San Diego, CA, 131-48.
Sajitha Bashir (1992); Study of Government and Private Schools in Tamil Nadu. (Presentation at NCERT)
Liz Bondi (1991); Attainment at Primary Schools. An Analysis of Variation between Schools. *British Educational Research Journal* 17, 3, 203 - 17.
- ² N.K. Jangira and Anupam Ahuja, (1991); Effectiveness of Cooperative Learning Based Training in In-service Training Programme on Special Needs. *Indian Journal of Disability and Rehabilitation*, July, 4, 1
- ³ N.K. Jangira (1985); *Professional Enculturation*, Bookworth India, New Delhi.

organization and culture of schools and links with classroom management); and dimension of teacher quality (content knowledge, pedagogical skill, reflection, empathy and managerial competence)⁴. The line of research on incentives is also quite relevant in this context. Khamerer framework includes such variables as : (a) remuneration; (b) instructional support (availability of instructional materials in the classroom); (c) instructional supervision at the classroom level; (d) training provided to teachers; and (e) career opportunity available to teachers⁵. Chapman, Snyder and Burchfield added career satisfaction and community support, recognition and approval to this framework. Four of the six separate regression analyses yielded instructional supervision, community support and amount of training as variables directly related to career satisfaction. In-service training turned out to be more important than initial training⁶.

The Present Study

Teacher quality formed a component in baseline assessment studies of the three districts in Uttar Pradesh and 46 districts of Assam, Haryana, Kerala, Karnataka, Madhya Pradesh, Maharashtra, Orissa and Tamil Nadu⁷. Designing of teacher quality component of DPEP requires an assessment of teacher policy in the states, its implementation at school level, teacher perceptions about policy, and training needs. The study explored these areas at two levels. At the policy level it covered initial education and training of teachers; teacher recruitment, teacher placement and transfer; remuneration and service conditions; and in-service education and training. At the second level, field study covered training needs assessment (TNA); perceptions about policy implementation; perceptions about social, economic and professional status; and problems faced in carrying out professional activities in the school. The field study covered 19 of the 46 DPEP districts.

⁴ OECD (1994); *Teacher Quality: Synthesis of Country Studies*, Centre for Educational Research and Innovation, Paris

⁵ F. Khamerer (1990); An Integrated Approach to Primary Education in D.W. Chapman and CA Carrier (Eds.), *Improving Educational Quality: A Global Perspective*, Greenwood Press, West Port CT.

⁶ David W., Chapman, Conard W., Snyder JR, Shirley A, and Burchfield (1993); Teacher Incentives in the Third World. *Teacher and Teacher Education. An International Journal of Research and Studies* 9, 3, 301 - 16.

⁷ Baseline Assessment Studies for the District Primary Education Programme (DPEP)

Design and Methodology

The study was conducted at two levels. The design and procedure matched these levels. At the first level covering teacher policy, documentation comprised analysis of government orders and procedural guidelines issued from time to time. Interview with senior administrators in the Directorates of Education and State Councils of Educational Research and Training (SCERTs) supplemented analysis of documents. Field study addressed policy implementation, institutional capacity for initial and in-service training, and teacher quality available in sampled cluster of primary schools and was conducted on a limited scale to get a feel of the policy implementation and perceptions of teachers.

Sample

For the interview with teachers, two project districts in each of the states were selected purposively (except in Madhya Pradesh where five districts were selected); the criteria for selection were the existence of a DIET in the district and whether it was a tribal district. The sampled districts of Karbi-Anglong and Darrang (Assam); Jind and Hissar (Haryana); Raichur and Belgaum (Karnataka); Wayanad and Malappuram (Kerala); Aurangabad and Nanded (Maharashtra); South Arcot and Dharmapuri (Tamil Nadu); Gajapati and Rayagda (Orissa); and Betul, Bilaspur, Ratlam, Sehore and Tikamgarh (Madhya Pradesh). One block in each district and one school complex within each block were selected randomly. One urban area (the district headquarters) was also studied. In states which do not have the system of school complex, primary schools in the catchment area of a secondary school were treated as a cluster of schools. In each district, the sample size was restricted to 100 teachers, distributed across rural and urban areas using the proportion of rural and urban population. Where the number of teachers was fewer than 100, teachers from the adjacent school complex were included in the sample. In all, 1,907 teachers were interviewed in 19 districts of the 8 DPEP states.

Two institutions including one DIET, wherever available from each project district, were selected purposively. Some districts had only one teacher training institution. The principal was interviewed to supplement information collected through the questionnaire. Block Education Officers of the sampled block were also selected for interview. The number of ETTIs including DIETs covered was 20. Beside principals, meetings were held with the faculty of each of the institutions. The District and Block

Education Officers interviewed were 15 and 23 respectively. Triangulation makes the findings reliable as such information on basic issues was sought from more than one source, the teacher, the teacher educator and the block and district Education Officers. Information from different sources has been used for inferencing provided in relevant sections.

Instruments

State Teacher Policy Questionnaire (STPQ) was developed to collect basic information. For assessing institutional capacity SCERT Information Schedule (SIS) and Training Institute Information Schedule (TIS) were developed. For the field study interview schedule for teachers (TS) and interview schedule for the district and block level administrators (AIS) were developed. The TS, AIS and TIS were pre-tested on a small sample at Gurgaon in Haryana. The research team also developed a simple training-cum-field manual which was used by field investigators after training for two days under a senior consultant. The consultants collected data on state policy and interviewed the administrators.

Statistical Analysis

Qualitative analysis of the documents on state policy on teachers was used. Descriptive statistics (percentages) were used for analysing data with regard to teacher profile, their pre-service training, perceptions regarding social, economic and professional status, problems of teachers, etc.

Teachers perception of professional status was taken as the criterion variable. Stepwise regression analysis was carried out. The explanatory variables were: sex, age, marital status, socio-cultural groups of teachers, education and training, reasons for choosing the teaching career, year of completing teacher training, satisfaction about pre-service training received, teaching experience, desire for in-service training, amount of in-service training, use of in-service training in classroom practice, perceptions of social status, satisfaction about social status, perception about economic status, time for commuting from home to school, head teacher accepting suggestions, promotional prospects, promotions received, help from teachers, staff meetings to discuss improvement in teaching-learning process, meetings of VEC/AEC to achieve the goal of UPE, transfer, multigrade teaching, lack of teaching aids, lack of physical facilities, high rate of student absenteeism, apathy of parents, lack of academic guidance from seniors. The criterion variable of teacher perception about professional status was based on the assumption that the teachers

perceiving the professional status as high are those who are motivated because they have a sense of career satisfaction.

Teacher Policy

This section deals with teacher policy covering teacher recruitment, placement, representation of female teachers in the teaching workforce and demand and supply of teachers. The state policy on teacher training, transfer and service conditions are also highlighted.

Teacher Recruitment

The states have laid down minimum academic accomplishments for primary school teachers. The states of Haryana, Karnataka, Madhya Pradesh, Maharashtra and Tamil Nadu require primary school teachers with 12 years of schooling and 2 years of diploma in elementary education. The states of Kerala and Orissa require 10 years of schooling with two years of diploma in elementary education. In Assam entry qualification for primary school teachers is 10 years of schooling without initial training. In the autonomous Hill district of Karbi-Anglong of Assam, teachers below 10 years of schooling continue to be appointed.

Ten years of schooling or below was prescribed for qualifying as primary school teachers when high/higher secondary school graduates were in limited supply and unprecedented expansion of primary schooling in the 50's and 60's required a large number of teachers. The situation has now changed. Not only higher secondary and university graduates are available, a large number of them also remain unemployed. The question of raising qualifications needs a review by the states taking into consideration implications for remuneration. It may improve teacher's knowledge of content to meet the demands of the upgraded primary school curriculum. It may have financial implications, but in practice, it has started happening. Recently, the UP government upgraded entry to elementary teacher training institutes to graduation. It has, however, been withdrawn for reasons other than availability of graduates. In DIETs in Haryana, a number of university graduates and postgraduates seek and get admission and this may be true in other states too. So upgrading of qualifications of primary school teachers needs consideration. Simultaneously, encouraging existing teachers to improve qualifications through open learning system also

needs consideration, particularly in the states where teachers are underqualified. Incentive system for upgradation of academic qualification needs to be worked out.

Recruitment Procedure and Placement

Recruitment procedure is practically centralized in most of the states. In Assam, Haryana, Kerala and Tamil Nadu recruitment is done at the state level, while in Karnataka, Maharashtra and Madhya Pradesh it is done at the district level. In Orissa, primary school teachers are recruited at the regional level.

Centralization of recruitment of primary school teachers poses several problems. Firstly, the head teacher and the local administration have little say in the selection of teachers for their school. Local specific needs of their schools are therefore not reflected. In the absence of specific guidelines regarding initial posting of primary school teachers either in rural or urban area, teachers are placed in schools wherever the vacancies are available. Most of the vacancies are in rural and remote areas. Centrally selected teachers either do not join or put pressure for initial posting in towns and cities. Influential ones do succeed. As a result, vacancies in rural, remote and hilly areas remain unfilled for a considerable period of time affecting pupils learning adversely in these areas. Thirdly, substitute teachers are not generally appointed when teachers proceed on long leave on account of ill health, maternity, etc. So decentralized recruitment with the involvement of the local administration needs consideration, particularly in the context of panchayat raj and local body acts.

Female Teachers

The reservation for teacher recruitment is according to government policy in each of the states. However, representation of female teachers causes concern, particularly from the point of view of enrolling and retaining girls in primary schools. At present, in most of the states female teachers are underrepresented except in the states of Kerala, Haryana and Tamil Nadu as indicated in Table 1.

Table 1 : Percentage of Male and Female Primary School Teachers

State	Male	Female
Assam(AS)	76.9	23.1
Haryana(HR)	52.0	48.0
Karnataka(KTK)	62.0	38.0
Kerala(KLA)	40.0	60.0
Madhya Pradesh(MP)	76.0	24.0
Maharashtra(MHA)	74.4	25.6
Orissa(OS)	75.0	25.0
Tamil Nadu(TN)	50.9	49.1

In other states, except Karnataka, only a quarter of primary school teachers are female. The GOI guidelines suggest improvement in recruitment of female teachers. In fact, in Operation Black Board scheme guidelines suggest that at least 50 percent of teachers to be appointed should be females⁸. States are making a conscious effort to increase female teachers in primary schools.

Demand and Supply of Teachers

There is no conscious effort to link supply of primary school teachers to demand. None of the states could provide a perspective plan for teacher preparation. In some states it seems that production of teachers has gone out of control despite the fact that teacher training institutions are recognized by governments. For example, in Kerala, Maharashtra, Karnataka and Tamil Nadu the turnover of teachers is twice the number recruited in the last couple of years. In Assam the capacity for providing initial teacher training at present is zero, because existing facilities are not sufficient for even clearing the backlog of untrained teachers. The demand and supply is balanced only in the states of Haryana and Madhya Pradesh.

In the absence of a perspective plan for elementary teacher education, growth of private unaided elementary teacher training institutions causes concern. In Maharashtra and Karnataka nearly half of the teacher training institutions are private unaided. The field study

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MHRD (1987); The Scheme of Operation Blackboard, New Delhi

indicates that most of the private unaided institutions have only two classrooms with no library and laboratory facilities. The staff is also inadequate. The percentage of failure in these institutions in Maharashtra (about 60)⁹, is an indication of the low quality of teacher training. In Tamil Nadu the court intervened recently for admission to ETTIs other than DIETs. The states may like to review and balance the demand and supply of primary teachers. The states must have a policy on elementary teacher training according to the standards provided by the National Council for Teacher Education (NCTE). Training quality assurance is the key to the supply of competent teachers.

Teacher Training

The administrative control of primary teacher training also seems to be an expedient decision rather than a rational one. For example, the administrative control of elementary teacher training institutions in Haryana is with the Directorate of Secondary Education and not with the Directorate of Primary Education. The justification given by the administrators during the interview is that diploma in elementary education is a post secondary course. Secondly, 6-8 grades are also with the Directorate of Secondary Education in the state. Similarly, the examinations are mostly conducted by the boards of secondary education which do not have the expertise for conducting practice teaching examinations. Curriculum is with the State Councils of Educational Research and Training/State Institutes of Education. A coherent policy on the administrative and academic control of primary teacher training institutions needs to be developed.

No state could provide policy on in-service training. The districts with DIETs also did not have a plan to cover all teachers. The pressure to provide in-service training to teachers for crossing efficiency bar or to get selection grade guided some in-service training programmes. Major in-service programmes were those sponsored by MHRD (PMOST, SOPT, from DIET funds) or project sponsored (MLL, NCERT projects, Teacher Empowerment, etc.). States like Kerala, Maharashtra, Haryana do provide funds but without a comprehensive plan. Only Madhya Pradesh established subdistrict centres (teaching centres) on an experimental basis but an overall policy was lacking there too.

There is no policy regarding staffing of the elementary teacher training institutions. The teacher student ratio varies from 1:12 to 1:40. Even in DIETs the guidelines have provided for a ratio of 1:15 (*a staff of seven for 100 student teachers have been*

⁹ SCERT (1993); *Training Needs and Motivation of Primary School Teachers - A Write Up*, SCERT Maharashtra, Pune

provided)¹⁰. Further the qualifications and experience of the master trainers does not make primary teaching experience a condition. Most of them are drawn from secondary schools. In recent years the states have raised the entry level of prospective teachers to +2 level and revised the curriculum. The master trainers in teacher training institutions except in DIETs remain university graduates with a degree in education. The subject competence of the master trainers to transact the upgraded curriculum is doubtful. Further study is required to assess actual transaction of the elementary teacher education curriculum. Even then there is a case for review of the qualifications of master trainers as in the case of DIETs. The states should formulate policy for the preparation of master trainers with primary teaching experience. The qualifications for experienced primary teachers for providing practice teaching should also be considered. The policy for providing in-service training to the staff of ETTIs needs to be worked out. Institutes of Advanced Studies in Education (IASEs) which have been assigned the role should be geared to this task.

Transfer Policy

In the states of Maharashtra, Haryana, Karnataka and Orissa the policy is to transfer teachers after 3-6 years. In the states of Assam, Tamil Nadu, Madhya Pradesh and Kerala teachers are transferred on request and administrative grounds only. The policy of periodic transfer seems to be the legacy of the civil service where incumbents are transferred after three years so that they do not develop vested interests. In a school, if teachers are effective, one does not find any justification for transfer after three to five years. It is usually exploited for the displacement of teachers to adjust some for purposes other than school performance. Nearly 30 percent of teachers were transferred upto three times during the last five years in one state. Transfers followed every election. It is confirmed by teacher perceptions in the baseline study which indicates that 40 per cent teachers consider their transfer as a punishment¹¹. The result may be low job satisfaction, low motivation and low performance.

In Maharashtra, the policy is to keep teachers at least 25 kilometers away from their home town. The premise is that teachers will stay at the school location. To what extent the purpose is served needs to be studied. The teachers who are transferred under this policy perceive transfer as a punishment. The outcome in terms of performance may not be positive. Secondly, in many villages residential accommodation for teachers, particularly female teachers, is not available. They stay in larger villages or nearer towns

¹⁰ MHRD (1989; *District Institutes of Education and Training - Guidelines*, New Delhi.

¹¹ N.K. Jangira and Anupam Ahuja (1994); *District Primary Education Programme Baseline Assessment Study of Four Districts of Haryana* DTESE, NCERT, New Delhi.

and commute distances as found in the field study. In both cases teacher performance is likely to be affected adversely. There seems to be a discrepancy between policy and field reality. Similar policy which proved counter productive in Haryana stands withdrawn. A study on the effectiveness is needed. The transfer policy needs review and rationalisation in some states.

Service Conditions

The service conditions include salary, allowances, housing facilities, study loans, pension and gratuity, benefits, etc. Table 2 summarises availability of the compensation and different facilities available to primary school teachers.

Table - 2 : Compensation and Service Conditions

Compensation and Service Condition		AS	HR	KTK	KLA	MHA	MP	TN	OS
Appointment	Regular	Y	Y	Y	Y	Y	Y	Y	Y
	Ad hoc	Y	N	N	N	N	N	N	N
Salary* (in Rupees/ month)	Initial	1185	1200	1130	1125	1200	1200	1200	1080
	Final	2395	2040	2100	1720	2040	2400	2040	1800
Housing Facilities		N	N	N	N	N	Y**	N	N
Medical Allowance/reimbursement		Fixed	Y	Y	Y	Y	Fixed	Y	Y
Allowance	Rural/Remote Area	N	Y	N	N	N	Y	N	N
	Hill Area	N	N.A	Y	Y	N	N.A	Y	N.A
Advances	House Building	Y	Y	Y	Y	N	Y	N	Y
	Scooter	Y	Y	Y	Y	Y	Y	Y	Y
Transfer Policy	Initial Posting	N	N	N	N	N	N	N	N
	In-service	N	3yrs.	N	N	5yrs.	N	N	6yrs.
Study Leave		N	Y***	N	N	N	N	N	Y
Age of Retirement		58	58	58	55	58	60	58	58
Retirement Benefits	Pension	Y	Y	Y	Y	Y	Y	Y	Y
	Gratuity	Y	Y	Y	Y	Y	Y	Y	Y
	Leave Encasement	N	Y	Y	Y	N	Y	Y	Y
	Group Insurance	Y	Y	Y	Y	Y	Y	Y	Y
Grievance Removal Machinery		Y	Y	Y	Y	Y	Y	Y	Y

Y-Yes, N-No,

* Scale of pay is only for regular teachers. In Assam, Ad hoc teachers are paid a consolidated salary of Rupees nine hundred per month

** Only for Lady teachers of rural areas.

*** Only for B.Ed degree

The scales are almost similar. In Assam, ad hoc teachers are appointed for Rs.900/- per month till they are regularized. The states of Haryana, Karnataka, Kerala and Tamil Nadu provide additional allowance for working in rural or hilly areas. The states do not provide housing facilities for teachers, but pay house rent in urban locations. The problem is not addressed to in rural and remote areas. All states provide pension, gratuity, group insurance and medical facilities. Leave encashment is also allowed in all states except in Assam and Maharashtra. There is no provision of study leave except in Orissa and for B.Ed in Haryana. All states have grievance removal machinery and a provision for advance for the purchase of a vehicle. Salary scales and selection grades after fixed years of completion of service are available in all the states.

The opportunity for career advancement is very low as indicated by the field study. Only limited percentage (6 to 32) of the teachers received promotion. The highest percentage of teachers who received promotion was in Dharmapuri district (32%) in Tamil Nadu and the lowest in Malappuram district (6%) in Kerala. Good primary school teachers have to leave primary education for career advancement. The qualifications and years in service and not good performance in primary schools is the criteria for promotion. It affects job satisfaction adversely and retention of teachers in primary schools. The states need to review the promotion policy and make a channel of career advancement in primary education where a primary school teacher can become a head teacher, Block Education Officer, join DIET faculty, and become master trainer in in-service training programmes, etc. The criteria of promotion should include teacher performance. In fact, channel to SCERT and Directorate of Education for primary school teachers should be available. The policy regarding caderisation of personnel in primary education and career opportunity for primary school teachers assumes significance in view of the stress on teacher quality.

FIELD STUDY

Institutional Capacity : State Council for Educational Research and Training (SCERT)

The SCERTs/SIEs are involved in curriculum development and training of staff of the DIETs and ETTIs. At present SCERTs cater to the needs of the entire school stage. The focus in DPEP is on the improvement of the quality of primary education through ensuring teacher quality. There is no group in the SCERTs which addresses this task. One or two staff members who are associated with this work do not have the experience in teaching at the primary stage.

The SCERTs are not equipped for training teacher educators in DIETs and ETTIs. The recent focus on continuous in-service training to supplement improved initial training requires a group, totally devoted to this task. The SCERTs did not report a system of training need assessment (TNA). It is also important for the effectiveness of training and transfer of its effects to classroom practice. Teacher consultation emerged as a factor contributing to their willingness to participate in in-service training programme in the field study. The states should establish a group on primary education in SCERTs with the responsibility for curriculum development, training teachers and training of teacher educators. Through National Technical Assistance programme the capacity of this group to design and execute curriculum and teacher development programmes in DIETs and subdistrict level institutions should be developed.

Institutional Capacity : District Institute of Education and Training (DIET) and Elementary Teacher Training Institutes(ETTIs)

Each of the teacher training institution turns out 40 to 100 teachers every year. The position regarding curriculum revision is not encouraging. Most of the states revised curriculum after the National Policy on Education (1986) between 1987 and 1993. It was reported that minimum levels of learning (MLLs) and multigrade teaching have been introduced in the syllabi. The theory content is very high in Kerala (60%) followed by Maharashtra (55% in the first year and 60% in the second year). It is 40% in other states. It includes both practice teaching as well as other practicals.

The practice teaching is not in terms of time or blocks. Almost all the states are making provision for a particular number of lessons ranging from 20 lessons in Maharashtra to about 35 in Kerala. The lessons observed during practice teaching also vary from 4 in Haryana to 25 in Kerala. There is no system for internship in any of the states. The teachers do not receive full charge of the classroom or the school. However, both SCERT and the DIETs suggest internship period of 3 to 6 months. In practice teaching experience in multigrade teaching is not provided. In Haryana practice teaching is not provided in a intact class, but in part classes comprising about 20 children. It does not seem to be a healthy practice.

DIETs are not fully operational in states except at Dharmapuri in Tamil Nadu. It was surprising that the DIET in Jind district had just two academic staff, but 12 supporting staff. In Madhya Pradesh staff ranges from 5 to 8. In Kerala, only a faculty of 11 was in position. DIET staffing is inadequate to meet the heavy demand of in-service training and providing guidance to the teacher centres or school clusters that are fast coming up.

The coverage of in-service training programme was miserably low (1.2 to 6.7%) in the DIETs of sampled districts in Madhya Pradesh.

Table 3. Teachers Trained By DIETs During 1992-93

State	Name of the DIET	Total No. of Teachers in the District	Total No. of Teachers and Head Teachers Trained	% of Trained Teachers
HR	JIND	1736	Nil	Nil
KLA	WYN	2152	726	33.7
	MAM	18268	757	04.01
TN	KSH	6340	743	11.70
MP	BET	4621	308	6.7
	BPR	12914	148	01.20
	RTM	3336	239	07.20
	SEH	3716	222	06.00
	TKM	3345	271	08.10

It is about 10 per cent or lower in other districts except in Wayanad in Kerala where the coverage was about one third of the teachers. With this rate all teachers cannot be covered even in five years. The states will have to plan subdistrict infrastructure at the block and school cluster level for continuous school based in-service training.

Library and its Utilisation

There are some teacher training institutions which do not have even a single library book. The number of books in other institutions range from 2,000 to 15,000. The utilisation of the books, however, is low. Table 4 shows the number of books, books issued to faculty and books issued to students.

In the Jind district of Haryana and Tikamgarh district of Madhya Pradesh no books were issued to either faculty members or students during the 1992-93 session. If issue of textbooks is any indication, in other districts also the utilisation level was very low except in Bilaspur in Madhya Pradesh.

Table 4 : Library Facilities and Utilization

ST	DT	ETTI/DIET	No. of Books	Issued to Faculty	Issued to Trainees
AS	KANG	BTC	1000	50	300
	DRG	BTC	2000	Nil	Nil
HR	JIND	DIET	Nil	Nil	Nil
	HSR	DIET	60	Nil	Nil
KLA	WYN	DIET	706	115	405
	MAM	DIET	329	40	75
MHA	AUD	GJCE	7500	100	100
	NAND	GJCE	14000	Nil	Nil
TN	KSH	DIET	1100	870	650
MP	BET	DIET	4500	125	728
	BPR	DIET	8016	645	1000
	RTM	DIET	15000	200	150
	SEH	DIET	6636	1100	352
	TKG	DIET	Nil	Nil	Nil
OS	GJP	GSTS	5200	90	230
	RYD	GSTS	9500	90	300

In Assam and Maharashtra the DIETs are not available in the project districts. In other states these are not fully operational and is a cause for concern. The states which have not established DIETs in DPEP districts will have to take expeditious steps for establishing and making them functional. It will take a couple of years for these states to make DIETs operational. As an interim measure these states should identify ETTIs and establish teacher training teams for undertaking the tasks envisaged in the district plans. The states in which DIETs are not fully operational should take steps to raise them to the optimum level with technical assistance from SCERT and national technical assistance group. These institutions should be provided the necessary equipment for in-service training and the capacity at the district level.

Teacher Quality

Teacher quality includes initial education and training and in-service training of teachers, desire for inservice training, preferred type of in-service training, instructional supervision, perceptions about socio-economic and professional status, and perceived career prospects and career satisfaction. The study covered 1907 teachers from 19 districts.

Sample Characteristics

The majority of the teacher population is aging because a large number of teachers were recruited during the 50s and 60s to meet the demands of expansion of primary education. The additional recruitment is mostly for attrition and a comparatively much lower rate of expansion. In Tamil Nadu about 90 per cent of the males and 60 percent of the females in South Arcot district are above 45 years of age. In Aurangabad in Maharashtra, Haryana, Madhya Pradesh and Karnataka the percentage of teachers above 45 years of age is 50 and above. The percentage of teachers in the age range of 25 and below is quite low except in Aurangabad and Nanded, where probably, more recruitment in recent years has been made. Motivational strategies directed towards the more experienced and aged teachers will therefore, have to be addressed to. It is a difficult task because the teaching practice and attitudes get fixed as the teachers get older and experienced, particularly when staff development avenues are limited.

When teachers are considered according to their socio-cultural status A(those belonging to SC/ST and OBC), there is a lot of variation not only among the states but also among the districts within the states. For example, in Jind and Hissar districts in Haryana only about 3 per cent of the teachers belong to SC while the population percentage is around 20 according to the 1991 Census. The same is the case in the districts of Sehore and Ratlam in Madhya Pradesh and South Arcot in Tamil Nadu. In other districts also, their percentage is lower, but not to this extent. Only in Belgaum district the percentage of SC teachers is higher than the population percentage in the district.

Representation of ST teachers is very low in relation to their population percentage in all the districts of Madhya Pradesh, Wayanad and Raichur. It may be due to low utilisation of educational opportunities by tribal children in these districts and absorption of the limited number of school graduates in other professions or vocations according to their preference. In the districts of Karbi-Anglong, Aurangabad and Nanded it is higher than their population proportion. The states may like to study the reasons for underrepresentation of SC and STs to plan intervention strategies to improve the situation.

There is no reference for comparison of the representation of OBC teachers but the percentage is the highest in Tamil Nadu, Betul followed by Sehore districts of Madhya Pradesh and Kerala.

Education and Training

The prescribed qualification of primary school teachers is +2 in the states of Haryana, Maharashtra, Madhya Pradesh, Karnataka and Tamil Nadu and matriculation in the states of Kerala, Assam and Orissa. Some of the districts in the states still have teachers who have not completed 10 years of schooling. It is the highest in Karbi-Anglong (50%), followed by Gajapati district (23.0). The district with teachers having 12 years of schooling or above are the highest in Kerala followed by Karnataka, Madhya Pradesh and Haryana. The percentage of such teachers goes up to 40-50. About five percent of the teachers have postgraduate qualifications in these states.

Satisfaction with Initial Training

The teachers were asked about their satisfaction with the initial training they had. The highest percentage of teachers who felt dissatisfied with initial training was in Wayanad (48) followed by Jind and Malappuram (30) and Hissar (28.81) districts. In other districts the percentage of teachers dissatisfied with initial training was below 20. The teachers were further asked about the aspects of initial training which they considered unsatisfactory. The major areas of dissatisfaction were: practical work, practice teaching, library and inadequate audio-visual material. In Haryana the teachers were also dissatisfied with the teaching of the theory course. They found textbooks of low quality and even non-availability of textbooks in the regional language. They also reported poor teaching in institutions and indifferent teacher educators. Study of teacher training institutions confirms the prevalence of poor initial training practices even now. The SCERTs suggest curriculum revision to include MLLs, multigrade teaching, use of teaching aids, demonstration lessons by experienced teachers and internship of 3-6 months to improve initial training. The states need to address the quality of initial training.

In-service Training

There is a wide range of coverage in in-service training programmes during the last 5 years. It is as low as 12 percent in Karbi-Anglong in Assam and as high as 84 percent in Raichur district in Karnataka. The coverage is also in the higher range in Wayanad (82%) and Dharmapuri (78%). Half of the districts covered less than 50 percent teachers in in-

service training programmes. The lower coverage of teachers in in-service training programmes is also supported by the baseline assessment studies.

The lower coverage in in-service training programmes in the districts is due to inadequate infrastructural facilities, inadequate allotment of funds and the absence of a conscious policy at the district level to cover all teachers. In fact, ETTIs do not have the obligation to provide in-service training which is that of DIETs. Even when DIETs function fully, it is not possible to cover all teachers in the district. Study of institutions reveals that most of the DIETs provided in-service training to less than 10% of the primary school teachers during the last two years. There is practically no infrastructure at the sub-district level. In Madhya Pradesh teacher centres are being established on an experimental basis. The data on the location of training programmes indicated few teachers receiving in-service training at the school or school complex level. The districts will have to develop adequate infrastructure at subdistrict level (blocks, school cluster, etc.).

The duration of most of the in-service training programmes has been one to two weeks. But these programmes are mostly a single shot affair with little follow up. The impact of such training on classroom practice is doubtful¹². Recurrent in-service training with school based staff development support has been found to contribute to school effectiveness and improved learning achievement as demonstrated by Jangira¹³ and Joyce and Showers¹⁴.

Another aspect of the quality of in-service teacher training is its relevance to teachers in the context of their schools. Interviews with SCERT faculty and DIET and ETTI and teacher training staff indicated top-down decision regarding training content and is not based on actual training needs assessment. Most of the teachers received training in content and methods of teaching. Very few received training in multigrade teaching, preparation and use of teaching aids and child centred education. None of the teachers

¹² The Evaluation Studies on the Impact of PMOST indicated that teachers could not implement new ideas in their school practice.

¹³ N.K. Jangira (1994); *Rethinking Teacher Education*, paper presented at the World Conference on Special Educational Needs Held on 7-10 June at Salamanca, Spain.

¹⁴ Bruce R. Joyce and Bowers Showers (1988); *Student Achievement Through Staff Development*, Longman, London.

received training in the role of teachers in improving enrolment, retention and attainment of children. The issue of relevance is related to its use in the classroom.

Reasons for not Using In-service Training in Schools

Nearly one third teachers in Darrang and Hissar districts, and a quarter of teachers in Wayanad did not make use of in-service training in classroom practice. In other districts too about 10-15 percent teachers fall in this category. The reasons for not using knowledge and skills acquired during in-service training given by teachers are: non-availability of the required material, heavy syllabus, lack of support from the head teacher and irrelevance of training. A promising experiment on teacher empowerment in Dhar district in Madhya Pradesh¹⁵ was reported by SCERT. The teachers are provided Rs.500 to purchase material and make teaching aids. They are also provided training in making teaching enjoyable through activities. Initial indications are encouraging. Its impact on learning achievement is yet to be evaluated. The effect of action research based staff development through NCERT sponsored Multisite Action Research Project¹⁶ in Wayanad DIET in Kerala reported improvement of classroom practice of teachers. It has implications for staff development in primary school.

Perceived Training Needs

In most of the districts 80 to 90 percent of the teachers desire to undergo in-service training irrespective of their sex or location in rural and urban areas. It is also borne out by the baseline assessment studies. This brings us to the perceived teacher needs for designing in-service training.

What should be the content of training?

The teachers were asked to suggest the content areas for in-service training. Most of them preferred methods of teaching, play-way techniques of teaching and preparation and use of teaching aids and multigrade teaching. In Assam and Kerala content of school subjects was given higher priority, while in Madhya Pradesh methods of teaching, play-way techniques and child centred education were accorded high priority. Surprisingly, the role

¹⁵ UNICEF (1993); *Universalization of Primary Education: Teacher Empowerment Project*, District Dhar, Regional Office, Bhopal.

¹⁶ N.K. Jangira and Anupam Ahuja (1993); *Multisite Action Research -Case Studies*, NCERT, New Delhi.

of teachers in enrolment, retention and achievement of children did not receive high preference. Probably teachers believed that with the other suggested areas of training, these parameters will also improve. Methodology of responsive teaching¹⁷ and active learning and child centred teaching¹⁸ need to be stressed.

Where should the training be organised?

The teachers were required to give preference for locating the training. Teachers in more than half of the districts preferred training in their own school and school complex. In Karbi-Anglong, Nanded, Gajapati, Rayagada, Ratlam, South Arcot, Raichur and Belguam more than 50 percent of the teachers desired training in teacher training institutions. For continuous staff development initiative infrastructre at the cluster level and peer support in schools is to be developed.

Duration and Periodicity

Teachers in most of the districts desired one to two week training. They are not in favour of more than two week training except in Maharashtra. Three week training in Maharashtra may be due to the condition for crossing the efficiency bar or getting selection grade. The preferred periodicity is that of once a year. The duration and periodicity of the training are linked to training design. These perceptions are based on the conventional programmes with fixed periodicity. Continous school based in-service training is likely to change the perceptions as it happened in the Multisite Action Research Project¹⁹.

What increases teachers participation in training?

Teachers were required to rank the factors which improve their willingness to participate in in-service training programmes. The factors receiving high preference are: consultation with teachers to assess training needs, competent resource persons, involvement of trainees in the training process and support for teachers to implement new ideas and innovations acquired in in-service training programmes. These factors need to be taken into consideratin in designing in-service training programmes.

¹⁷ N.K. Jangira (1994); *Responsive Teaching*, National Publishing House, Delhi.

¹⁸ N.K. Jangira (1994); *Effective Teaching: A Child Centred Approach*, National Publishing House, Delhi.

¹⁹ N.K. Jangira and Anupam Ahuja (1993); *Ibid*.

Teacher Perceptions about Status

The teachers were interviewed to assess their perceptions regarding social, economic and profession status. They were also interviewed to explore perceived motivation. These perceptions were assessed on the premise that positive perceptions about status are related to career satisfaction. The career satisfaction leads to motivation and commitment to perform in schools and classrooms²⁰. For example, the teachers who desire more in-service training and join teaching because of interest in teaching young children may perceive their professional status as high. For reliability check negative indicators like long vacations, limited hours of duty and last choice for the job were also taken into account. Teacher perceptions regarding the factors that contribute towards improvement of social, economic, and professional status were also studied.

Reasons for Joining the Teaching Profession

The teachers were required to give reasons for joining the teaching profession. All teachers in Karnataka and Maharashtra indicated interest in teaching young children as the reason. It was about 80 per cent in Assam, Kerala, South Arcot district in Tamil Nadu, Orissa and Madhya Pradesh. In, Haryana and Wayanad district in Kerala and Dharmapuri district in Tamil Nadu, this reason was not rated high.

Atleast one third of the teachers joined teaching not because of interest in teaching young children, but due to some other reasons. Limited hours of duty and joining teaching because no other avenues were available also find a place in reasons for joining teaching in Jind district of Haryana, both the districts of Karnataka, Malappuram district in Kerala and Dharmapuri district in Tamil Nadu. Higher percentage of teachers expressing interest in teaching young children as a reason is contradictory in Karnataka, Malappuram district in Kerala, Maharashtra, Orissa and Madhya Pradesh. About onethird of teachers in these districts also gave other reasons which were for cross checking responses. Overall, nearly half of the teachers joined teaching because of interest in teaching young children.

Perceived Social Status

Teachers in different states perceived different factors contributing to their social status. It implies that the perceptions are culture based. For example, teachers in Assam, Madhya Pradesh, Haryana, Maharashtra and Orissa considered good performance of

²⁰

David W., Chapman, Conard W. Snyder JR, Shirley A. and Burchfield (1993); Teacher Incentives in the Third World. *Teacher and Teacher Education: An International Journal of Research and Studies*, 9 (3), 301 - 16.



students in studies and sports as the major factor, while teachers in Kerala and Tamil Nadu considered commitment to the welfare of students and moral status of teachers as the major factors contributing to high social status. Teachers in Karnataka consider high qualifications as the most important factor contributing to high social status of primary school teachers.

Teachers were asked to indicate whether their social status declined or improved or remained the same during the last ten years. Nearly half of the teachers in Assam, Haryana and Ratlam; and Sehore district of Madhya Pradesh perceived a decline in their social status during the last ten years. In rural areas of Hissar district in Haryana; both districts in Karnataka; Malappuram district in Kerala; both districts in Maharashtra, Tamil Nadu, Orissa and all districts in Madhya Pradesh except in Ratlam, felt that their social status improved. Overall it seems that one third to half of the teachers, particularly in urban areas, felt that their social status declined. It has implications for motivation of teachers. Such teachers are likely to have low motivation affecting their performance.

Perceived Economic Status

Teachers were asked to indicate the extent to which they could meet needs of their family with salary. The percentage of teachers in both the categories 'to a great extent', and 'not at all' was low except in a few districts. In Haryana; Maharashtra; Dharmapuri district in Tamil Nadu; Orissa; and Ratlam and Tikamgarh district of Madhya Pradesh, about 10 percent teachers are able to meet family needs with their salary. In Kerala, Tamil Nadu, and Gajapati districts in Orissa about 10 percent teachers expressed that salary was not at all sufficient to meet their family needs. Although the concept of meeting family needs is subjective and varies from culture to culture and place to place, but the data suggests that some teachers are not in a position to meet their needs from salary. This segment of teachers do have problem of motivation.

Teachers were also asked to give their perception with regard to their economic status. Economic status of teachers was perceived as the lowest in Assam followed by Haryana and Kerala. Majority considered it moderate. Teachers' economic status was perceived as high in Tamil Nadu.

Perceived Professional Status

To assess professional status, primary school teachers were asked to rank factors that they consider contributing to the professional status. The perceptions varied from state to state. In Karnataka, Kerala and Orissa academic qualifications received rank one. In

Haryana and Madhya Pradesh teaching experience received rank one. It seems to be in agreement with the aging population of teachers in these two states where most of the teachers fell in the 45 years and above age range. In Assam, performance of students was ranked first while in Maharashtra and Tamil Nadu commitment to the welfare of students was ranked first. Academic qualifications, teaching experience, performance of students, commitment to the welfare of students, membership of expert committees emerged as the factors which contribute to the professional status of teachers. Although teachers perceived membership of expert committees as a factor in professional status, the representation of sampled teachers on committees was rare.

Improvement in Qualifications

The teachers improving academic and professional qualifications ranged from 10 to 62 percent except in Karbi-Anglong district of Assam where it was only 2. Percentage of teachers acquiring a university degree was over 40 in Assam, Haryana, Wayanad in Kerala, Maharashtra, Tamil Nadu and the districts of Betul and Ratlam in Madhya Pradesh. Number of teachers who acquired a postgraduate degree was more than 20 percent in the two districts of Haryana, Dharmapuri district in Tamil Nadu and Tikamgarh district in Madhya Pradesh. Similarly, teachers were also acquiring degrees in education. It might be due to the availability of opportunities in the Open Learning System. It seems to be a healthy trend but one has to be cautious. Unless special steps are taken, these teachers cannot be retained in primary schools. Secondly, these teachers may get demotivated because they may continue to work in primary schools. This is likely to affect their performance adversely.

Promotional Prospects

The teachers were asked about their promotional prospects. More than 90 percent of the teachers in Assam and more than 50 percent in Haryana, Kerala, Tamil Nadu and Madhya Pradesh reported that their chances for promotion were bleak. In the states of Maharashtra and Orissa percentage of teachers was between 20 and 38. About one third of the teachers in Karnataka, Wayanad in Kerala, Bilaspur in Madhya Pradesh and more than 50 percent in Maharashtra and Orissa considered their promotional prospects as bright. The percentage seems to be on the higher side. The teachers might perceive selection grade also as a promotional prospect. This percentage comes close to the percentage of teacher in the age group 45 and above. The actual percentage of teachers who received promotion

was low. It ranged from 6 to 32 per cent. It was the highest (32) in the Dharmapuri district of Tamil Nadu and the lowest (6) in Malappuram district of Kerala. In most of the districts less than 20% teachers could get promotion in their career.

Table 5: Perceived Promotional Prospects of Teachers

State	District	Very Bright	Bright	Bleak
AS	KANG	-	08.00	92.00
	DRG	01.00	02.90	96.10
HR	JIND	18.00	26.00	56.00
	HSR	13.50	24.00	62.50
KTK	RCHR	13.00	33.00	54.00
	BLM	05.00	32.00	63.00
KLA	WYN	04.00	31.00	65.00
	MAM	-	20.00	80.00
MH	AUD	10.00	52.00	38.00
	NAND	08.00	64.00	28.00
TN	SAR	03.00	28.00	69.00
	DHPI	10.00	21.80	68.20
MP	BETU	11.00	22.00	67.00
	BPR	04.00	37.00	59.00
	RTM	04.00	18.00	78.00
	SEH	09.00	25.00	66.00
	TKM	20.00	22.00	58.00
OS	GJI	16.00	64.00	20.00
	RYD	11.00	52.00	37.00

Perceptions about Professional Status

More than one third of the teachers considered their professional status high in the states of Karnataka, Kerala, Maharashtra, Tamil Nadu and Orissa. Most of the teachers rated their professional status as moderate or low. Taking all the factors together these perceptions of over onethird teachers are bound to affect the motivation level adversely.

Considering the perceived social, economic and professional status of teachers one feels that most of the primary school teachers have low motivation. It is therefore not

surprising that the learning achievement in reading and mathematics as reported in baseline assessment studies is low. The teachers either are not qualified or have low professional competence or the environment in the school and education departments does not allow them to transfer teaching competence to performance.

Problems

Timely Payment of Salary

Fortythree percent teachers in Darrang district in Assam reported non-payment of salary on a fixed date.

Table 6: Teachers not Getting Salary on a Fixed Date

State	District	Percentage of teachers
AS	KANG	1.0
	DRG	43.1
HR	JIND	8.0
	HSR	14.4
KTK	RCHR	10.0
	BLM	-
KLA	WYN	3.0
	MAM	-
MHA	AUD	6.0
	NAND	5.0
TN	SAR	2.0
	DHPI	2.0
MP	BETU	6.0
	BPR	-
	RTM	-
	SEH	3.0
	TKM	5.0
OS	GJI	21.0
	RYD	73.0

This percentage was highest in Rayagada (73%) followed by Gajapati (21%), and Hissar (14%). In other districts the percentage of such teachers ranged from 2 to 8. The irregularity in payment of salary is a cause for concern.

Academic Support from Different Functionaries

The percentage of teachers not getting any help from District Education Officers (DEOs) was the highest in Tikamgarh (68%), followed by Malappuram (63%), Hissar (56%), Bilaspur (54%) and Nanded (46%). Even in other districts teachers did not get any help from these functionaries. About onethird of teachers in Madhya Pradesh reported no help from Block Education Officers and about onefifth of teachers in Karbi-Anglong, Hissar, Rayagada, Betul reported no academic assistance from Block Education Officers. Nearly 10 percent teachers did not receive any academic support from teachers of their own school and more than onethird of teachers in Wayanad, Dharmapuri and all districts of Orissa and Madhya Pradesh did not get any help from the school complex. This indicates the absence of supervision and help which leads to teacher isolation and discourage teachers to improve performance in the school.

Multigrade Teaching

The teachers perceive multigrade teaching as a problem mostly in the rural areas of Assam, Haryana, Karnataka, Maharashtra; Dharmapuri district of Tamil Nadu; Orissa and Madhya Pradesh. The percentage of teachers reporting the problem ranged from 42 percent in Maharashtra to 87 percent in Karbi-Anglong. Very little pedagogical and administrative support is reported by teachers.

High students' absenteeism was perceived by more than 50 percent of teachers in the states of Madhya Pradesh, Orissa, Haryana and Wayanad district in Kerala. Non-availability of in-service training was reported by more than twothird of teachers in Assam, Karnataka, Kerala and Orissa. In other states also, the problem was faced by onethird to half of the teachers.

More than 50 percent teachers in Madhya Pradesh, Orissa, Kerala and Karnataka and Haryana considered syllabus as heavy for students. This is also compounded by the non-availability of textbooks in time in the states of Assam, Karnataka, Kerala, South Arcot district in Tamil Nadu and Orissa. The percentage ranged from a quarter to hundred

percent. Similarly, high percentage of teachers in almost all the states expressed lack of teaching aids in schools as the problem.

Problems of Female Teachers

More than half of the female teachers reported problems in schools. Lack of cooperation from male teachers was the highest in Sehore (50%), Tikamgarh (42.9%), Nanded (26.7%) and Hissar (25.6%). It was about 10 percent in the other states except in Assam, Kerala and Rayagada district in Orissa. In Assam, particularly in Karbi- Anglong district, females enjoy equal status with men culturally. In Kerala females are equally educated. Lack of separate toilets and availability of residential accommodation in schools was reported by most of the female teachers in all the districts. About 10 percent of the female teachers in Darrang district of Assam; Bilaspur and Tikamgarh districts in Madhya Pradesh; and about 5 percent in Haryana, Kerala, South Arcot district of Tamil Nadu, Gajapati districts of Orissa reported harassment by the head of the institution.

The policy of the government is to improve representation of female teachers not only for ensuring equal professional status but also in improving girls' enrolment and retention in schools. Unless these problems are addressed to in the project districts, this objective cannot fulfilled.

Prediction of Professional Status Perception

The positive perception of professional status was considered as an indicator of career satisfaction and motivation. The teachers were required to rate their professional status on five points ranging from 'Very High' to 'Very Low'. Based on the descriptive analysis data, 38 explanatory variables were selected for regression analysis. See Tables 7 and 8.

The 14 significant explanatory variables are: Economic status, help from the head teacher, lack of academic guidance, long vacations, could not find any job, marital status, year of completion of teacher training, desiring inservice training, number of days of inservice training, promotional avenues, interest in teaching young children, social status, staff meeting, limited hours of duty. Product moment correlations are not significant for the explanatory variables of marital status, interest in teaching young children, social status, staff meeting and limited hours of duty. The Beta coefficient for these variables are however, significant

Table 7: Explanatory variables, Beta Coefficient, r and Standard Error

Explanatory Variable	Beta	r	Standard Error	t Value
Economic status (VH=1, H=2, MOD = 3, L&VL = 4)	.187**	.240**	0.778	8.43
Help from head teacher (VH=1, SH=2, NH=3)	.110**	.215**	0.764	4.74
Lack of academic guidance (Yes=1, No=2)	.103**	.197**	0.759	4.52
Long vacations (Yes=1, Else=2)	.138**	.111*	0.756	5.66
Could not find any job (Yes=1, Else=2)	-.112**	-.087**	0.753	4.78
Marital status (Unmarried=1, Else=2)	.084**	0.044	0.751	3.87
Year of completion of teacher training	.074**	.112**	0.749	3.42
Desiring inservice training (Yes=1, Else=2)	.065**	.073**	0.747	3.02
No. of Days inservice training	-.055**	-.071**	0.746	2.59
Promotional avenues (Yes=1, Else=2)	.052**	.050*	0.745	2.41
Interest in teaching young children (Yes=1, Else=2)	-.056**	-0.004	0.744	2.44
Social status (Remained same=1, Improved=2, Else=3)	-.051**	-0.147**	0.743	2.24
Staff meetings (Term&Year=1, Week&Month=2, Else=0)	-.048*	0.089**	0.742	2.20
Limited hours of duty (Yes=1, Else=2)	-.051*	0.004	0.742	2.14

The 14 variables explain 14.2 percent variation in the level of perceived professional status of teachers. The first explanatory variable picked up in the step down regression analysis was economic status. It explains 5.7 percent of the variation. It is followed by 'help from the head teacher' which explains 3.3 percent variation in the perceived professional status of teachers. Two more variables, 'lack of academic guidance' and 'staff meetings to discuss learning-teaching problems' are also linked to this variable. The teachers who perceived their professional status high are sensitive to the lack of academic guidance. These three variables together explain 4.9 percent of the variation. The variables are

indicators of internal supervision which is also emerges as significant explanatory variable of student achievement²¹.

Table 8: Explanatory Variables, Multiple R, R² and Variation Explained (VE)

Explanatory Variable	Multiple R	Square R	%VE
Economic status (VH=1, H=2, MOD = 3, L& VL =4)	0.24	0.057	5.7
Help from head teacher (VH=1, SH=2, NH=3)	0.301	0.09	3.3
Lack of academic guidance (Yes=1, No=2)	0.322	0.104	1.4
Long vacations (Yes=1, Else=2)	0.332	0.111	0.7
Could not find any job (Yes=1, Else=2)	0.334	0.119	0.8
Marital status (Unmarried=1, Else=2)	0.352	0.124	0.5
Year of completion of teacher training	0.360	0.13	0.6
Desiring inservice training (Yes=1, Else=2)	0.366	0.133	0.4
No. of Days inservice training	0.37	0.137	0.3
Promotional avenues (Yes=1, Else=2)	0.374	0.14	0.3
Interest in teaching young children (Yes=1, Else=2)	0.377	0.142	0.2
Social status (Remained same=1, Improved=2, Else=3)	0.38	0.145	0.3
Staff meetings (Term&Year=1, Week&Month=2, Else=0)	0.383	0.147	0.2
Limited hours of duty (Yes=1, Else=2)	0.386	0.149	0.2

Multiple R = .386

R Square = .149

Adjusted R = .142

²¹

Stephen W. Raudenbush et al (1992), *On the Job Improvements in Teaching Competence Population and Human Resource Development*, The World Bank.

The explanatory variables of 'desire for in-service training' predict the perceived level of professional status of primary school teachers. The amount of in-service training was indicated by the number of days of cumulative in-service training during the last five years. The teachers with more days of in-service training perceive their professional status high.

The choice of the teaching profession was conceptualised as a composite component of the positive sub component of interest in 'teaching young children' and three sub components of 'long vacations', 'limited hours of duty' and 'could not find any other job' as opposite to 'interest in teaching young children'. The descriptive analysis indicated contradictory choice decisions. The same trend is appearing in regression analysis indicated by contradictory directionality. This variable needs further conceptualisation and study.

Expectation of promotion has emerged as a significant explanatory variable of the level of perceived professional status. The teachers who considered promotion chances 'very bright' and 'bright' perceived their professional status high. Although chances for promotion of primary teachers do not go beyond head teacher, larger number of teachers considered their promotion channels as 'very bright'. It may be due to a number of teachers who had already acquired or were in the process of acquiring higher qualifications, as indicated in descriptive analysis, may be expecting promotion outside primary schools.

Social status emerged as a predictor of perceived professional status. The variation explained is small, but it does matter. This aspect needs to be addressed as the descriptive analysis indicated that about onethird of the teachers perceive a decline in social status.

A large part of the variation in the perceived professional status remains unexplained as only 14.2 percent has been explained by the 14 variables. Further efforts to conceptualise professional status and explanatory variables are needed. But it does indicate that within school processes (help from head teacher, academic help and discussion on problems relating to classroom), amount of in-service training, economic status and promotional prospects do affect teacher perceptions about professional status. These findings from regression analysis are preliminary, since the second level of analysis to assess variations between state is yet to be carried out and findings therefore should be considered as indicative only.

Policy Implications

Within the time constraint the study has provided useful information having implications for the review of teacher and teacher education policy to make these responsive to the needs of DPEP. It indicates in-service training needs of teachers in the states and other parameters for the design of the programme of continuous school based in-service training. The policy implications arising out of the study are summarised in Table 9. Against each implication 'x' indicates relevance to states and '*' indicates suggestions of the experts.

Table 9: Policy Implications

Implication	A S	H R	K T K	K L A	M H A	T N	M P	O S
1. Demand and Supply								
1.1 Review of demand and supply	x	x	x	x	x	x	x	x
1.2 Alternative use of surplus pre-service training capacity			x	x	x	x		
1.3 Augmentation of pre-service training facilities	x							
2. Recruitment, Placement and Transfer								
2.1 Upgradation of teacher qualification to +2 level	x			x				x
2.1 Pre-service training before entry into teaching	x							
2.3 Decentralized recruitment at district level	x	x		x		x		x
2.4 Involvement of local administration in recruitment	x	x	x	x	x	x	x	x
2.5 Placement policy for schools in difficult contexts to ensure teacher availability	x	x	x	x	x	x	x	x
2.6 Rationalized transfer policy instead of bureaucratically fixed period of transfer		x	x		x			x
2.7 Rationalized transfer policy instead of forced posting at a distance from home					x			

3. Representation of socio-cultural groups of teachers									
3.1	Increasing representation of female teachers	x		x		x		x	x
3.2	Increasing representation of SC teachers		x					x	x
3.3	Increasing representation of ST teachers			x	x				x
4. Service Conditions									
4.1	Compensation for posting in remote and difficult contexts	x		x	x	x			x
4.2	Study leave for improving further education and training	x		x	x	x	x	x	x
4.3	Cadre review and improvement of career advancement opportunity	x	x	x	x	x	x	x	x
4.4	Suitable performance linked incentives	x	x	x	x	x	x	x	x
5. Institutional Capacity									
5.1	Creating a group in SCERTs for primary teacher education	x	x	x	x	x	x	x	x
5.2	Involvement of suitable mechanism for training needs assessment	x	x	x	x	x	x	x	x
5.3	Strengthening SCERTs/IASE for training of teacher educator	x	x	x	x	x	x	x	x
5.4	Internship for school experience	x	x	x	x	x	x	x	x
5.5	Strengthening DIETs to meet heavy demands of inservice training	x	x	x	x	x	x	x	x
5.6	Creating adequate infrastructure at subdistrict level for inservice training	x	x	x	x	x	x	x	x
5.7	Functionalisation DIETs on priority basis	x		x		x			x
5.8	Clearing backlog of untrained teachers	*				*		*	

5.9	Use of open learning system for upgradation of teacher qualification	*	*	*	*	*	*	*	*
5.10	Use of sandwich courses for clearing backlog of untrained teachers	*	*	*	*	*	*	*	*
6. Library and its Utilization									
6.1	Making library functional with librarian		x						
7. Training Design									
7.1	Preparation and use of teaching aids	x	x	x	x	x	x	x	
7.2	Multigrade teaching	x	x	x				x	x
7.3	Teachers role in increasing enrolment, retention and achievement	*	*	*	*	*	*	*	*
7.4	Updating content and methods of teaching	x	x	x	x	x	x	x	x
7.5	Training of head teachers and BEO's in instructional supervision and techniques	*	*	*	*	*	*	*	*
8. Problems									
8.1	Timely payment of salary	x	x						x
8.2	Steps for improving instructional supervision by BEO's	*	*	*	*	*	*	*	*
8.3	Housing facilities for female teachers	x	x	x	x	x	x	x	x
8.4	Provision of separate toilet for female teachers	x	x	x	x	x	x	x	x
8.5	Augmenting physical facilities	x	x	x	x	x	x	x	x

Further Research

Several areas of research emerge from the present study. The disequilibrium between demand and supply in some states raises the question of wastage of resources in pre-service teacher education including the induction training cost and quality of training,

particularly of private unaided institutions. A comprehensive study on labour market on primary school teachers is desirable.

In this study, the issues of teacher motivation and teacher quality could not be linked to student achievement due to time constraint. A study linking incentives and teacher quality to student achievement will be quite useful.

Efficiency of teacher training institutions preparing primary school teachers, particularly DIETs, /ETTs (Government, private aided and unaided), is needed from the point of view of costs involved and quality assurance.

Large investments will be made for in-service training of teachers and teacher educators. Studies on the impact on classroom practice including teacher behaviour and student achievement are desirable for the improvement of in-service training design.

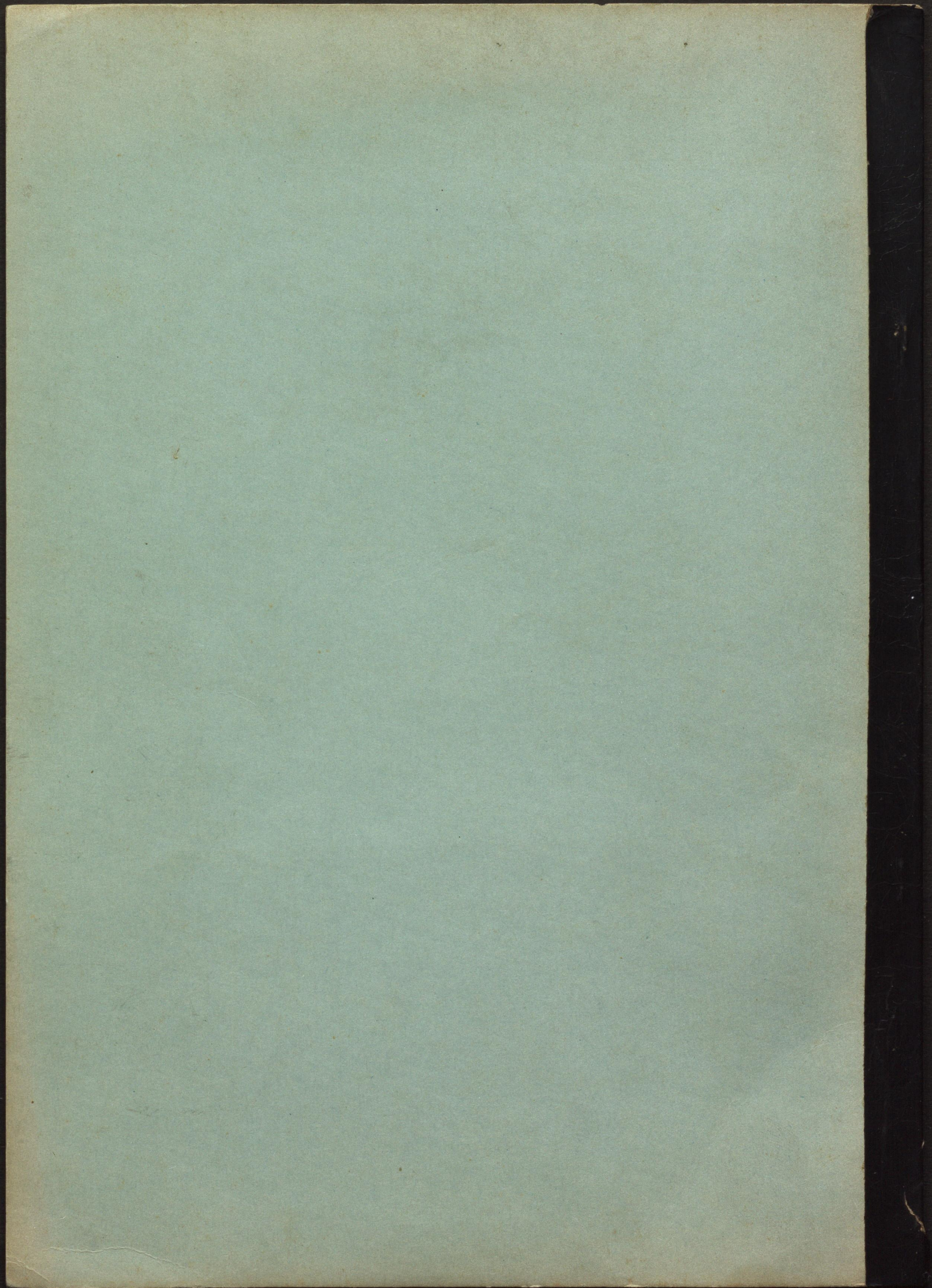
The regression analysis has yielded within school and school complex, variables of internal supervision (help from head teacher, peers, academic guidance). Experimental study to establish causal relationship between internal supervision and student achievement will be of interest.

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Draft for Discussion

THE DISTRICT PRIMARY EDUCATION PROGRAMME

BASELINE BENEFICIARY STUDIES

Learning Achievement of Primary School Children
in Reading and Mathematics

A SYNTHESIS REPORT

Presented in
NATIONAL SEMINAR ON DPEP STUDIES
Organized By
National Council of Educational Research and Training
New Delhi - 110 016
23-25 August 1994

District Primary Education Programme

Learning Achievement of Primary School Children in Reading and Mathematics

National Seminar on Studies

(23 - 25 August, 1994)

Synthesis paper

by

N.K. JANGIRA

The Study in the states of Assam, Haryana, Karnataka, Kerala, Maharashtra and Tamil Nadu was funded by the World Bank; and in the states of Madhya Pradesh and Orissa by UNICEF



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Acronyms

BAS	Baseline Assessment Study
BEO	Block Education Officer
DA	Daily Allowance
DIET	District Institute of Education and Training
DPEP	District Primary Education Programme
DTSE	District Technical Education and Special Education

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Acronyms

BAS	:	Baseline Assesement Study
BEO	:	Block Education Officer
DA	:	Daily Allowance
DIET	:	District Institute of Education and Training
DPEP	:	District Primary Education Programme
DTESE	:	Department of Teacher Education and Special Education
GOI	:	Government of India
LCM	:	Lowest Common Multiple
MHRD	:	Ministry of Human Resource Development
MLL	:	Minimum Levels of Learning
NCERT	:	National Council of Educational Research and Training
OBC	:	Other Backward Caste
PECR	:	Primary Education Curriculum Renewal
SC	:	Scheduled Caste
ST	:	Scheduled Tribe
TA	:	Travelling Allowance
TS	:	Teacher Schedule
TNA	:	Training Needs Assessment
UNICEF	:	United Nations International Childrens Emergency Fund

States

AS	:	Assam
HR	:	Haryana
KLA	:	Kerala
KTK	:	Karnataka
MHA	:	Maharashtra
MP	:	Madhya Pradesh
OS	:	Orissa
TN	:	Tamil Nadu

Introduction

Schools are places where children come to learn and achieve. Primary schools lay foundation for subsequent learning. Study of achievement and its determinants has interested educational researchers all the world over. In India 227 studies were reported in the fourth survey of research in education 1983-88¹ and 136 studies have been identified in the fifth survey which is in progress² Few studies are addressed to the primary stage. Most of these (83%) are doctoral studies. Almost all are small scale studies covering limited geographical areas. Statistical analysis is mostly correlational. The generalisability of findings is low.

The two national surveys of achievement of primary school children conducted by National Council of Educational Research and Training (NCERT) stand out. The first survey of achievement of primary school children in Mathematics was conducted in 1965-66³. The second national study on attainment of primary school children in Language and Mathematics was conducted in 1990⁴. Both surveys indicated low levels of learning achievement.

In the post National Policy on Education (NPE) and Jomtien EFA conference period investments in primary education picked up considerably through national commitment complemented by international community support to realise the goal of quality primary education for all children. It requires rational investment decisions, research based interventions and continuous monitoring of progress. The use of feedback by management at all levels and practitioners at grassroot level to carry out midcourse correction is indispensable. It will ensure better returns in terms of student achievement from investments. The Baseline Assessment Study (BAS) was conducted in 46 districts in 8 states and is in progress in another 8 districts of Uttar Pradesh. Table 1 indicates the districts and states covered by different organizations.

¹ M.B. Buch (ed.) *Fourth Survey of Research in Education, 1983-88*, National Council of Educational Research and Training, New Delhi, p 25.

² P.N. Dave and C.G.V. Murthy (1993), *Educational Research and Innovations: Bibliography*, National Council of Educational Research and Training, New Delhi.

³ S.S. Kulkarni (1970), *All India Survey of Achievement in Mathematics*, National Council of Educational Research and Training, New Delhi.

⁴ S. Shukla, V.P. Garg, V.K. Jain, S. Rajput and O.P. Arora (in press), *Attainment of Primary School Children in India*, New Delhi.

Table 1 : Agencies conducting BAS in DPEP states

State	Agency	No. of Districts
Assam	NCERT	4
Haryana	NCERT	4
Madhya Pradesh	NCERT	19
Maharashtra	NCERT	3+2*
Orissa	NCERT	4
Sub Total	NCERT	36
Kerala	NIEPA	3
Karnataka	NIEPA	4
Sub Total	NIEPA	7
Tamil Nadu	New Concept	3
Total		46

* BAS in two earthquake hit districts of Latur and Osmanabad is in progress

The districts in all the states except Kerala are low female literacy districts. These are educationally backward districts. So, the results are not generalisable to the states, but provide an indication of the situation in these districts. Wherever state has been referred to it should be considered in the context of these districts only. Even within these districts also there are variations. Individual state reports provide district specific findings. Here trends are indicated in terms of the range between districts. The readers are cautioned against generalisation for the whole state.

Objectives

The major objective of BAS was to assess learning achievement of students approaching the end of the primary school cycle class 4 or 5 in Reading and Mathematics based on class 3 or 4 curriculum. Reading assessment was confined to word meaning and comprehension and did not include mechanics of reading. The study also assessed a number of variables relating to students, school and home to explain differences in learning achievement. Class 2 students were assessed for simple literacy and numeracy skills to study the level of learning in the beginning of the primary school cycle. Drop outs were assessed for simple literacy and numeracy skills to study the level of retention of these skills. Micro analysis to diagnose areas of difficulty was the concomitant outcome. The data would also be used to identify factors contributing to school effectiveness.

Variables

Learning achievement is the outcome of interactive effects of student characteristics, home and school variables. The context and process variables relating to achievement are specified in box one.

Box One: Specification of BAS variables		
Students	Class 4 or 5	Sex, age, socio-cultural groups (SC,ST, OBC), location in rural and urban areas, preschool experience, attendance, repetition, availability of textbooks and other reading material, participation in learning activities in classroom, educational aspirations, time to complete homework.
	Class 2	Sex, age, socio-cultural groups, age, retention, and preschool experience.
	Drop Outs	Sex, age, socio-cultural groups, repetition, reasons for drop out.
	Teacher	Sex, socio-cultural groups, age, qualifications, initial training, availability of teaching facilities and aids, expectations about pupil learning, teaching activities, and supervision.
School		School location in relation to other institutions, enrolment, school size, class size, teacher pupil ratio, multigrade teaching status, drop out, repetition, community participation in management.
		Size of family, educational level of parents, occupation, support for studies and home work.

Design and Procedure

The design of BAS evolved out of the four studies conducted during the 90's by Shukla, Garg, Jain, Arora and Rajput⁵; Govinda and Varghese⁶; Sajitha⁷; and Sajitha and Ramakrishnan⁸. Multipurpose survey design was used. The procedure for sampling, design and selection of tools, data collection and management, and statistical analysis are described in this section.

⁵ S. Shukla, et al (in press), *Ibid*.

⁶ Govinda, R. and Varghese, N.V. (1994), *Quality of Primary Schooling in India: A Case Study of Madhya Pradesh*, International Institute of Educational Planning, Paris.

⁷ Sajitha Bashir (1992), *Study of Government and Private Schools in Tamil Nadu*, (presentation at NCERT).

⁸ Sajitha Bashir and Bimla Ramakrishnan (1992-93), *Baseline Assessment Survey of Three Districts in Uttar Pradesh*, New Concept Consultancy, New Delhi.

Sampling

Multistage sampling procedure was used in BAS. At the first stage about 20 percent rural blocks and urban areas identified in 1991 Census were selected randomly from the District Primary Education Programme (DPEP) target districts. Wherever tribal block did not appear in random selection one tribal block was added to the sample. At the second stage 35-45 primary schools were selected randomly. Rural and urban population proportion was the basis for allocating schools to rural and urban strata. The total number of schools in sampled rural blocks and urban locations was the basis for deciding the number of schools to be selected from each site.

At the third stage students and teachers were selected. Upto 30 all class 4 or 5 students were selected and where the number exceeded, 30 students were selected with random start. Similarly, upto 20 all class 2 students were selected and where the number exceeded, 20 students were selected with random start. Upto 5 identified drop out students all were selected and if the number exceeded, 5 students were selected randomly. Upto 5 teachers including the headteacher all were selected and if the number exceeded, 5 were selected randomly.

Table 2: Sample of school, students and teachers covered in BAS

State	Schools	Class 5/4	Class 2	Drop Outs	Teachers
HR	145	2516 (57%)	2462 (84%)	329 (45.38)	548 (75.58)
MP	802	8771 (36%)	8331 (52%)	1671 (41.67)	1874 (46.73)
OS	165	1366 (27%)	1704 (51%)	346 (41.94)	528 (64.00)
TN	120	2345 (65%)	1856 (78%)	132 (22.00)	357 (59.5)
AS	161	1710 (35%)	1981 (61%)	97 (12.04)	452 (56.15)
KTK	176	2561 (59%)	2469 (70%)	389 (43.95)	438 (49.49)
KLA	113	3089 (91%)	2231 (98%)	Nil (00.00)	508 (89.91)
MHA	135	2146 (52%)	2022 (74%)	153 (22.67)	409 (60.59)
TOTAL	1817	24504	23056	3117	5114

In all, 106 blocks, 91 urban areas, 1817 schools, 24,504 class 4 or 5 students, 23,056 class 2 students, 3117 drop outs, and 5114 teachers were selected for BAS. The statewise sample of students and teachers is given in table 2. The percentage of students in the sample was much less than expected in all the states except Kerala. The enrolment and attendance in primary schools particularly in rural areas, was lower than expected. In the states of Assam, Madhya Pradesh and Orissa, the sample of class 4 or 5 students was less than 50 percent of the expected. It was the lowest in Orissa (27%) and highest in Kerala (91%), followed by Tamil Nadu (65%), Karnataka (59%), Haryana (57%) and Maharashtra (52%). In class 2 the situation was a little better.

Instruments for Assessment of Learning

Standardised tests were used to assess learning achievement in Mathematics and Reading in class 5 in the states of Haryana, Madhya Pradesh, Orissa and Tamil Nadu; and class 4 in the states of Assam, Karnataka, Kerala and Maharashtra. Class 5 tests, developed by NCERT for the countrywide survey of attainment of primary school children in 1991, are based on the common curriculum of grade 4 prevalent in different states. Class 4 tests based on class 3 curriculum in Mathematics⁹ and Reading¹⁰ were developed by NCERT for BAS in 1993. Table 3 indicates composition of the tests for different levels.

For class 2 simple literacy and numeracy tests developed by NCERT for the Primary Education Curriculum Renewal (PECR) project were used. For drop outs simple literacy and numeracy tests were adapted from the test used in World Bank research projects in other countries.

⁹ N.K. Jangira (1993), *Mathematics Achievement Test for Class 4*, National Council of Educational Research and Training, New Delhi.

¹⁰ N.K. Jangira (1993), *Reading Test for Class 4*, National Council of Educational Research and Training, New Delhi.

Table 3: Composition of the tests for learning achievement

Class	Subject	Content Areas	No. of Items
5	Mathematics	Fundamental operations, unitary method, multiples fraction, decimal, time; weights and measures and geometry	40
	Reading	Word Meaning	40
		Comprehension	44
4	Mathematics	Number reading/recognition, place value, addition and subtraction, multiplication, division, weights and measures, time and period, fraction, geometry/shapes.	40
	Reading	Word Meaning	20
		Comprehension	24
2	Numeracy	Number Recognition, Addition and Subtraction	10
	Literacy	Letter Reading, Word Reading	10
Drop Out	Numeracy	For fundamental operations	8
	Literacy	Factual questions based on 5 statements	

Instruments for Context and Process

Student Present Schedule (SPS): Class 5 students who were administered Mathematics and Reading tests, were interviewed using this schedule. It comprised items for collecting information on the background variables like preschooling, attendance, preceptions about teachers and teaching, availability of learning materials, school related activities at home, nutrition, etc.

Dropout Student Schedule (SD): Beside background variables, it covered reasons for leaving the school and the work in which they were engaged in at the time of the study.

Teacher Schedule (TS): This schedule was used for interviewing teachers and head teachers. Information regarding teacher characteristics, qualifications, training and experience, availability of teaching material and aids, teaching activities and supervision were included in this study.

School Record Schedule (SR): This schedule covered items of information relating to physical facilities, teaching materials, enrollment, attendance, drop out, multigrade teaching and school management.

The tests and interview schedules were translated, printed and supplied to all PIs by NCERT. New Concept translated and printed the tests in Tamil from the English version provided by NCERT.

Field Notes

For each school a separate set of field notes was completed by the team of investigators. It contained the method of selecting class 5 or 4, and class 2 students, drop outs and teachers. Field notes also documented investigator's observations on unique aspects and provided quality information.

Data Collection and Management

Data were collected by 4 teams of two investigators each, and one supervisor constituted for each of the districts. These teams received 10 day intensive training in respective states. They were provided training by master trainers trained at NCERT. The training covered the purpose, design and methodology of BAS; use of each of the instruments; the procedure of drawing samples of students and teachers in schools; field experience using instruments and interview; and deployment plans. The training was conducted in participatory mode with individual and small group work, discussion in large groups, practice in the use of techniques through role play and in simulated situations, and practice in the field followed by discussion. The field training was organised in the same way as the teams were to collect data for the study.

Great care was taken for providing training in test administration. During the training, sufficient common examples were created to provide experience to children in taking the test. The procedure was explained with examples. It was followed by children doing examples on the blackboard ensuring demonstrated learning of the correct procedure. The teachers continued in the class with the investigators upto the experiences being provided to the children. After that the teachers left the class. Thus testing was not influenced by the teachers.

The data were collected from each school over a period of three days. At the end of the day the data were scrutinised in the school. The tests and schedules were scrutinised at the district level. It was scrutinised at the state or the central level before statistical analysis.

Descriptive statistics was used for preliminary analysis. Simple regression analysis was carried out on the data of one state to explore the line of final multivariate analysis. Analysis using multilevel modelling has been planned to further refine the results.

Results

The results of the descriptive analysis in respect of the context and process variables are presented in this section. Results of simple regression analysis for one state are also presented. The results are indicative of the trends pointing to the possible interventions. More pointed policy implications will emerge from the application of multilevel modelling.

Class 5 or 4 Student Characteristics

Student characteristics in this section cover gender and sociocultural groups represented in the sample, parents education and occupational level, preschool experience, medium of instruction and mother tongue, educational and occupational aspirations, access to reading material, participation in teaching activities, etc.

Gender Composition

The gender composition in the sample of class 5 or 4 students was almost equal in Kerala and proportionate to girls' participation in Tamil Nadu, Maharashtra and Orissa. In other states, it varied from district to district. Some districts had more girls than boys. For example, the percentage of girls in the sample in Morigaon in Assam was more than 50. Same was the situation in Sirsa in Haryana and Betul in Madhya Pradesh. These states have some schools exclusively for girls and some such schools formed a part of the randomly selected sample. Sampling correction was not applied because there was no significant difference in the achievement of boys and girls in such districts.

Sociocultural Groups

The sociocultural groups covered in BAS were scheduled castes (SC), schedule tribes (ST) and other backward classes (OBC). Table 4 gives minimum and maximum percentage of students in each of these groups in the sample.

The variations reflect demographic pattern in the states and districts. For example, Karbi-Anglong district in Assam is predominantly tribal while some districts in Orissa and Madhya Pradesh have one-third tribal population. Some districts had nearly one-third SC population. The variations are also partly influenced by the participation rates and attendance on the days of the data collection. The districts with minimum percentage were below population proportion and maximum more than population proportion in respective districts. For example, percentage of SC students was higher (31.9%) in Sirsa district in Haryana. Is it due to the migratory agriculture labour or inflation to avail SC benefits? The question needs further probing. Similar situation prevailed in some districts in Madhya Pradesh. Reference data were not available for comparing OBC with Census population.

Table 4: Socio-cultural groups of class 5 or 4 students

State	SC		ST		OBC	
	Min	Max	Min	Max	Min	Max
HR	14.8	31.9	1.7	3.2	16	24.9
MP	6.5	34.1	1.5	35.5	32.8	73.4
OS	5.8	27.1	10.1	35.6	13.4	29.5
TN	12	26.8	2.7	8.1	63.9	84.2
AS	3.2	7.8	4.1	52.9	2.3	29.7
KTK	NA	NA	NA	NA	NA	NA
KLA	3.5	7.2	0.4	17.3	49.2	87.6
MHA	12.7	22.9	2.8	8.5	8.4	15.7

Education of Parents

The districts were selected on the basis of low female literacy rates in DPEP except in Kerala where it was much higher than the national average. The figures 1 and 2 indicate minimum and maximum level of percentage of illiteracy and the level of primary education in different states.

A few trends are quite conspicuous. The variations among the states and within states among the districts and between males and females are high in the education levels of the parents of sampled class 5 or 4 students. The district with the highest illiteracy level of fathers (50.5%) was Kaithal in Haryana, followed by Gajapati district in Orissa (40.5%), Thiruvannamalai in Tamil Nadu (39.9%). About one-third of the fathers in other districts except in Kerala were illiterate. The situation in respect of mothers was alarming. The district with the highest illiterate mothers was Kaithal in Haryana (84.5%), closely followed by Sidhi in Madhya Pradesh (79.9%). Over half of the mothers in Karbi-Anglong in Assam, Nanded in Maharashtra, Dharmapuri in Tamil Nadu and Kalahandi in Orissa were illiterate. These figures are higher than the official literacy rates in these districts. Discounting educated parents placing their children in fee charging private schools (even in rural areas in Haryana and Tamil Nadu), the illiteracy level among parents, especially mothers, was very high. Similar trend was discernible in respect of primary education.

Fig. 1 : Illiterate Parents

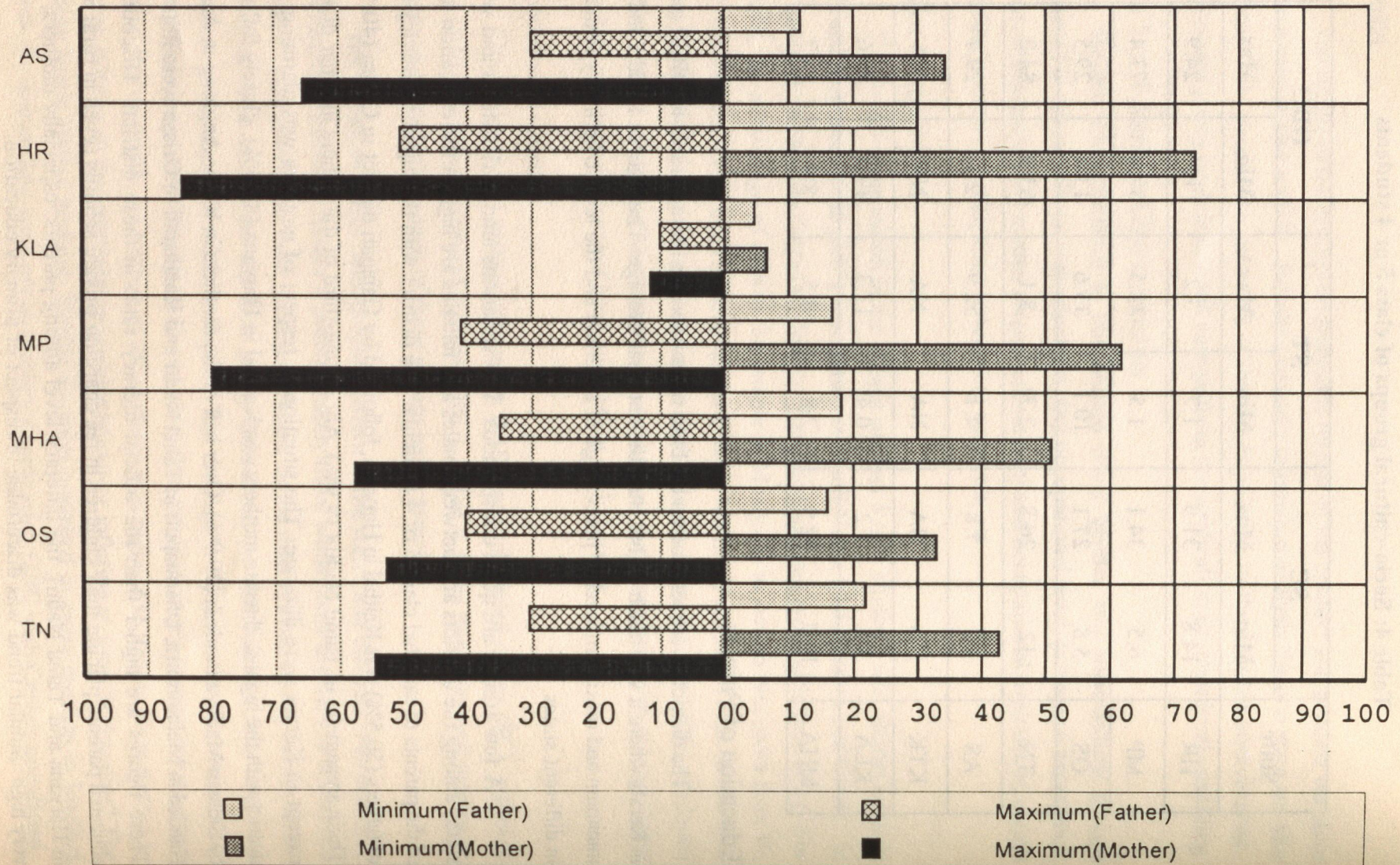
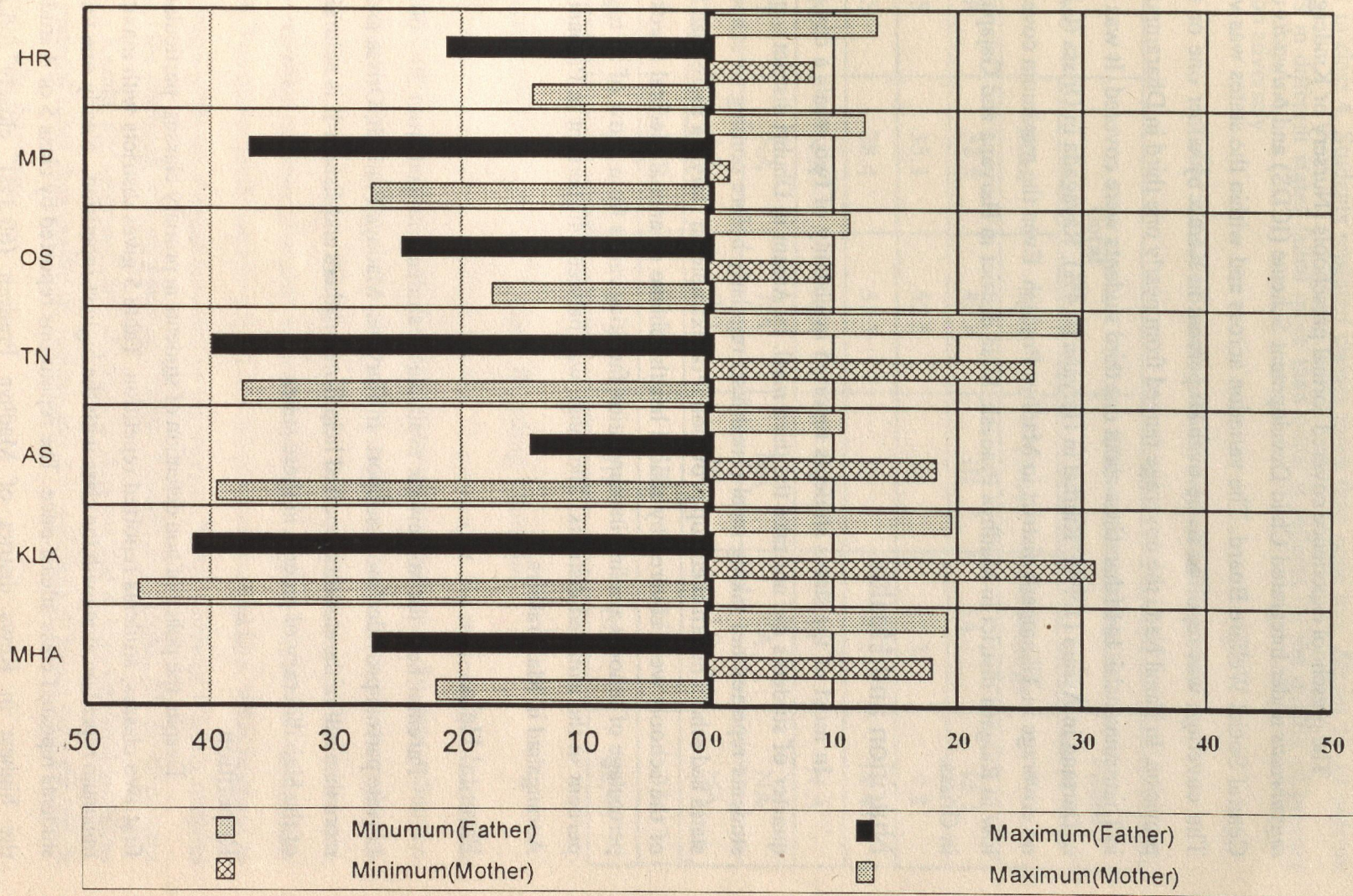


Fig. 2 : Parents with Primary Education



Preschool Experience

The preschool experience covered formal preschools (Nursery or Kindergarten) or *anganwadis* under Integrated Child Development Scheme (ICDS) and *balwadis* under the Central Social Welfare Board. The variation across and within the states was very high. The coverage was reported to be over 80 percent in Kerala by either one or the other provision. In Tamil Nadu the coverage ranged from nearly one third in Dharampuri to half in Thiruvannamalai. In Maharashtra about one third students were covered. It was very low in Darrang in Assam (1.4%), Kaithal in Haryana (0.4%), Rayagada in Orissa (0.3%), and no coverage in Tikamgarh district in Madhya Pradesh. Even the maximum coverage was low in Raigarh district in Madhya Pradesh, Sirsa district in Haryana and Gajapati district in Orissa.

Nutrition and Health

In most of the states students reported availability of two meals a day. About a quarter of students did not take the third meal. In Assam in Dhubri district a quarter of students reported not taking meal (breakfast) regularly before coming to school. Some states had school health check up provision. For example, in Haryana more than four fifth of the schools were covered by school health scheme or annual medical check up. The percentage of schools availing immunisation facilities varies from a low of 15 to about 70 percent in the sampled districts. The range was between 40 percent in Parbani to 86 in Aurangabad in Maharashtra.

Parental Help

Parental help for homework available to students ranged from 30 - 60 percent. Literate parents provided more support. In Haryana, Madhya Pradesh, Orissa and Assam, more than half of the students reported help from brothers and sisters. It is natural because of the high illiteracy of parents in these states.

Repetition

Despite the policy of non detention of students in primary classes, particularly in the first two classes, students reported repetition. Table 5 gives districts with maximum and minimum repetition alongwith the class with the highest repetition. Nearly one third of the students repeated class atleast once. The repetitions reported by class 5 or 4 students was the highest in Rewa district of Madhya Pradesh (60.3%), closely followed by Karbi-Anglong in Assam (59.8%) and Kalahandi district in Orissa (51.3%). The highest

repetition was reported in class 3 in the states except in Tamil Nadu, where it was 11 percent in class 4. Students repeated classes more than once too. About 10-33 percent students in different states failed more than once. It reflects on the quality of primary education adversely.

Table 5: Class 5 or 4 students repeating classes

State	Uotal		Class with maximum repetetion		Failed more than once
	Min.	Max.	Class	Percentage	
HR	32.5	43.8	III	14.7	15.1
AS	35.3	59.8	III	17.3	9.8
OS	28.4	51.3	III	16.5	18.43
TN	N.A	N.A	IV	11	N.A
KTK	NA	NA	NA	NA	NA
KLA	1.2	7.9	III	7.9	NA
MP	13.3	60.3	III	24.2	33
MHA	28.7	31.3	III	14.6	28.98

Availability of Textbooks and other Reading Material

The textbooks were available to over 95 percent of the students in most of the states. The textbooks were verified also at the time of visit to schools for data collection. The timely availability of the textbooks was however raised in many places in Assam, Madhya Pradesh, and Orissa. Though textbooks were supplied free of cost in Assam, students reported teachers charging some amount (Rs. 2 per student) for contingency expenses. The contingency expenses from the department reached late. What happens to this contingency? Is the amount returned to the students? Availability of reading material other than the textbook was very low in Madhya Pradesh and Orissa. About 40 percent students in Kerala, and over one third students in Haryana and Assam reported access to reading material other than textbook. In Haryana TV watching at home was also much higher than radio listening.

Educational Aspirations

The educational aspirations of students were found to be high in most of the states. In Maharashtra about 90 percent of the students desired to study upto matriculation. In Assam, Haryana, Orissa and Tamil Nadu more than two third students desired to study upto this level. The educational aspirations were low in Madhya Pradesh where only one third students desired to study upto matriculation in the district of Chhatterpur, the highest being in Guna (38.47%). Only 2-5 percent students aspired for graduation and beyond. The educational aspiration of girls in several districts were lower than that of boys indicating low status accorded to the education of girls.

Teacher Quality

Teacher characteristics include gender, age composition, education and training and teaching context. More than half of the sampled teachers were females in Kerala, Jind and Kaithal districts in Haryana, and Aurangabad district in Maharashtra. In other districts the percentage of female teachers was about a quarter of the total teachers. Female representation was the lowest in Assam (23 percent), followed by Madhya Pradesh (24.1 percent). Inter district variations were marked. The trend was also confirmed in the teacher study¹¹. Similarly, representation of SC and ST teachers was lower than their population proportion. Only in Karbi-Anglong in Assam tribal teachers were more than the population proportion in the district. The implication is to prepare more female, SC and ST teachers to improve availability for recruitment.

Education and Training

Minimum of ten years of schooling is the requirement in most of the states. Some states like Haryana and Tamil Nadu have raised it to 12 years. But still some districts had teachers with less than 10 years of schooling. The highest number was in Karbi-Anglong in Assam (67.9%), followed by Gajapati in Orissa (21.95) and Betul in Madhya Pradesh (21.8%). Districts in all the states except Haryana, Kerala and Tamil Nadu have some teachers in this category.

Over 95 percent teachers were trained in Haryana and Tamil Nadu. Maximum number of teachers were untrained in Karbi-Anglong in Assam (67.1%), closely followed by Dhar in Madhya Pradesh (58.5%), and Phulbani in Orissa (41.8%). Districts in Kerala

¹¹ N.K. Jangira, Ajit Singh and S.K. Yadav (1994), *Training Needs and Motivation of Primary School Teachers*, Department of Teacher Education and Special Education, NCERT, New Delhi.

had about 5-10 percent untrained teachers. The percentage of untrained teachers was high in Assam, Madhya Pradesh and Orissa. In the districts covered by BAS it was higher than the state average of the untrained teachers (Figure 3).

More than half of the teachers except in Kerala did not receive inservice training during the last five years in all the four districts of Assam, Rajnandgaon district in Madhya Pradesh and Rayagada district in Orissa. More than two third teachers desired inservice training in all the states. In Satna district in Madhya Pradesh the desire for training was very low (17.7%). Teaching methodology, presenting and communicating subject matter, multi-grade teaching (except in Kerala), and National Policy on Education were the areas preferred for inservice training. Teachers in Kerala and Haryana also wanted training in the content of school subjects.

Teachers do face difficulty in Mathematics particularly. In a recent study class 5 tests in Reading and Mathematics were administered to 42 teachers in one of the states during the data collection for BAS. The mean score in Mathematics was 30.55 out of the maximum score of 40 and 75.74 in Reading out of the maximum score of 86. Most of the teachers (83.3%) could not do correctly question on LCM and place value (55%). In language comprehension 64% of the teachers could not give correct title to a paragraph¹². Majority of teachers except in Maharashtra desired training in the school or the school complex. Both have implication for inservice training design. The areas and schools in which teachers need subject matter competencies along with pedagogical competencies will have to be identified. The process of training needs assessment (TNA) should be established in districts. School based and teacher based training programmes will have to be designed.

Availability of Teaching Material

Most of the teachers in all the districts had blackboards, but in some districts chalks were not available to a quarter of the teachers. It implies that blackboards in these schools remained unused. In fact, in schools with multigrade teaching more than two blackboards are required to leave assignment in one class when the teacher goes to another to teach. Almost all teachers used textbooks. Charts, maps and globes were available in the blocks covered by the Operation Blackboard (OB) scheme. Teacher guides were available to more than half of the teachers in Tamil Nadu and Kerala and about one third teachers in Haryana and Maharashtra. The availability was very low in Assam, Orissa and Madhya Pradesh. Dictionary was available to only one fifth of the teachers. Teachers in Assam and Orissa did

¹² K.M. Gupta, *Teacher Performance on Mathematics and Reading Tests* (Manuscript for publication).

Fig. 3 : Teachers Without In-Service Training

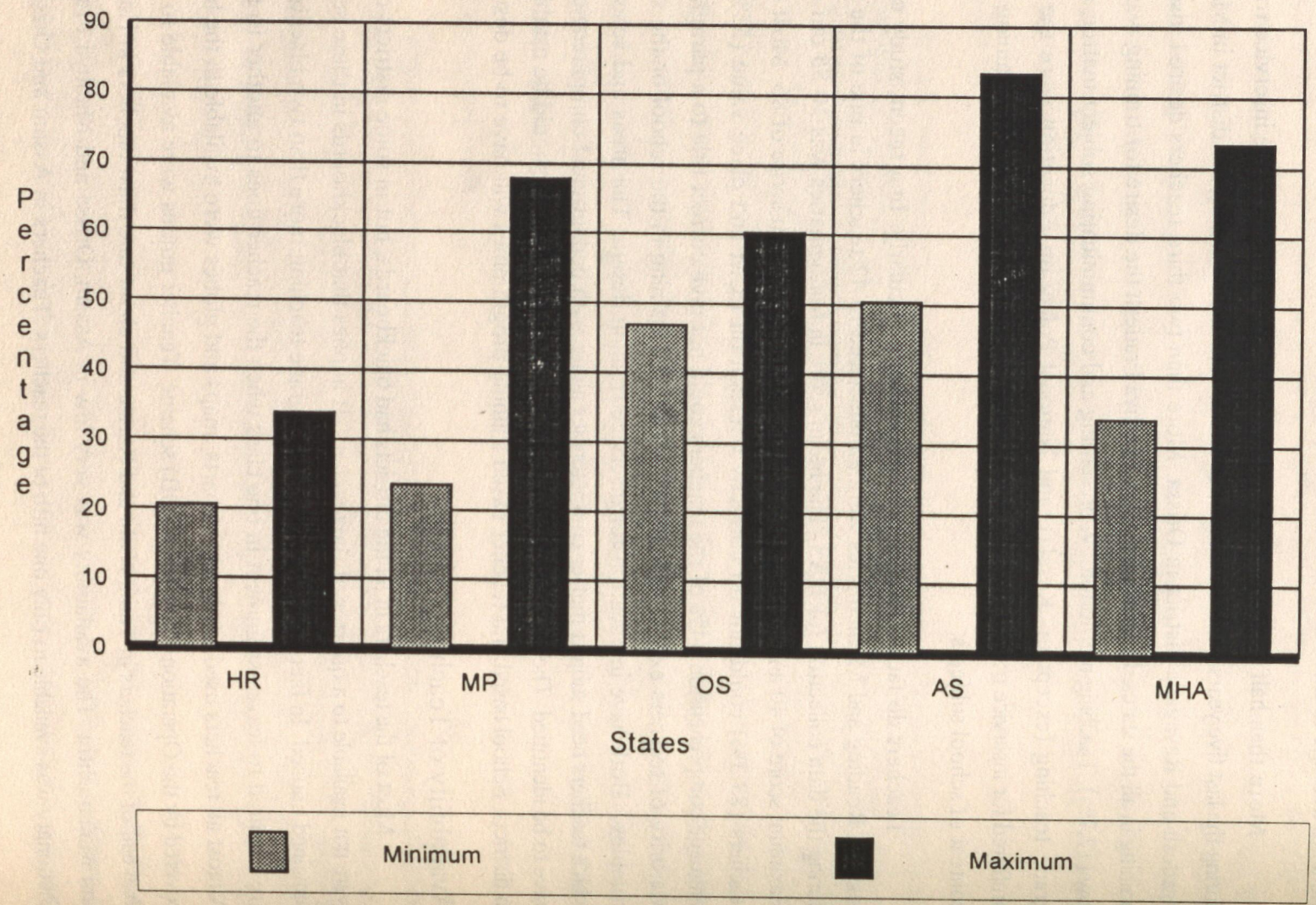
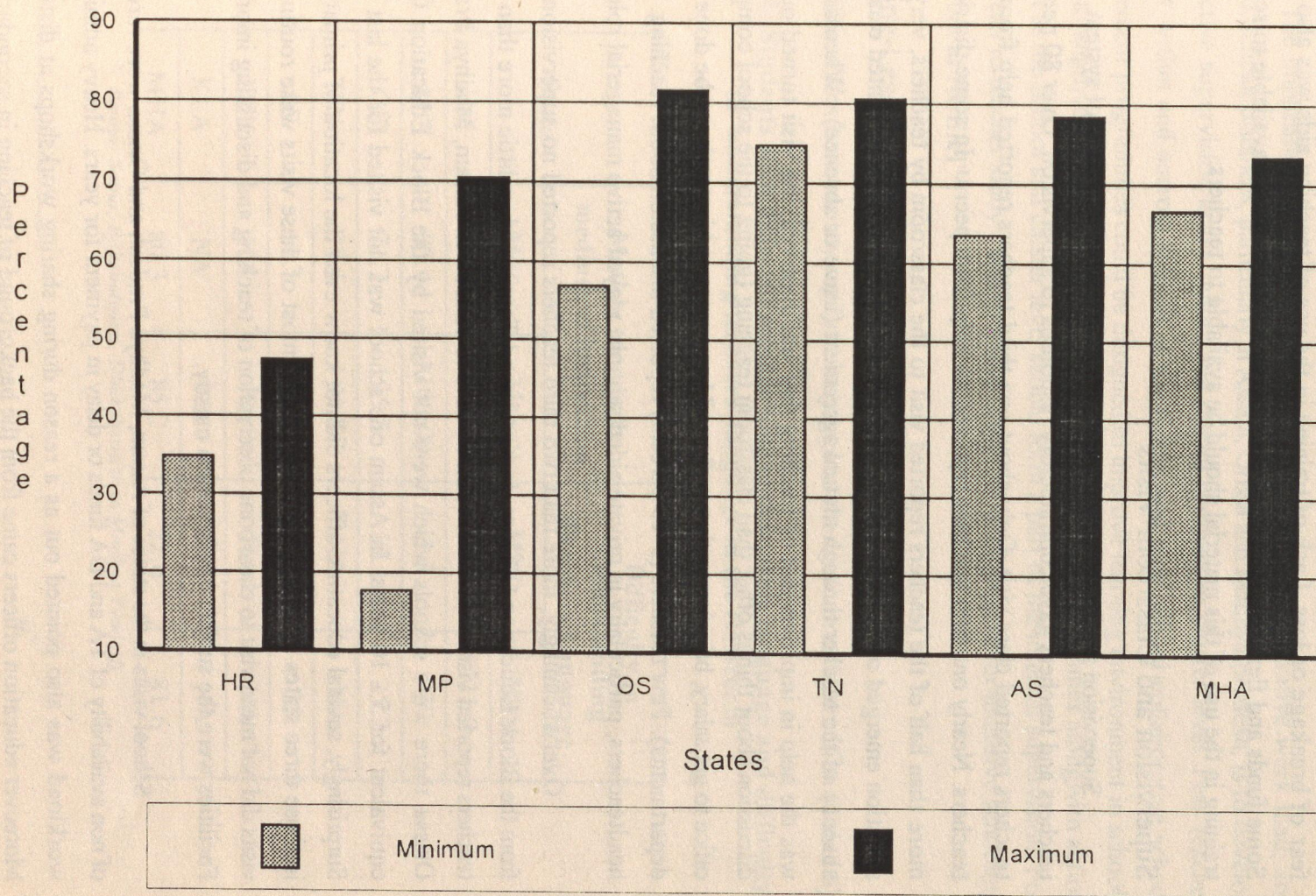


Fig.3 : Teachers Desiring In-Service Training



not report its availability. The use of teaching aids was reported by one-third or less teachers. The availability of teaching aids to teachers was lower than the availability in schools. Non availability of aids was due to reluctance of the headteachers to issue for the fear of breakage or loss. Lack of training in the use of teaching aids was also reported. Some funds and flexibility to purchase or prepare aids should be available to school. The training in the use of this material should be available to teachers.

Supervision and Classroom Visits

Supervision seemed to be the weakest link in the primary school system. The head teachers and teachers gave contradictory responses to supervision. Over 80 percent head teachers reported class visit. Only about one-third teachers reported help from the head teachers. Nearly one fifth teachers reported no help from peers. In some districts where more than half of the teachers reported visit to the classroom by teachers, very peculiar situation emerged on further probing. Many a time the headteacher visited classes in the absence of the teacher through mutual agreement (leave or absence). When asked what was the help in improvement of teaching that was received, the visit turned out to be a discussion about things other than classroom teaching (going to the school complex/BEO office to get salary, bringing textbooks for children, non teaching tasks to be done for other departments). Few teachers (5-10 percent) reported discussion about teaching. In Kerala headteachers, particularly in private aided schools, played active managerial role.

Overwhelmingly, more than two third teachers reported no supervision and help from the Block Education Officers. In Kerala and Tamil Nadu a little more than one-third teachers reported visit of the education officers to school. In Assam, Madhya Pradesh and Orissa there were schools which were not visited by the Block Education Officer or equivalent for 5 - 10 years. In Assam one school was not visited for the last 17 years. Surprisingly, several education officers did not know even the location of primary schools in these three states. The probing revealed that most of these visits were routine. School visits did not mean visit to classroom, observation of teaching and discussing improvement. Facilities were the subject of discussion mostly.

School visits in the states of Assam, Madhya Pradesh and Orissa were rare because of non availability of TA and DA funds or delay in payment for years. Heavy administrative workload was also pointed out as a reason during sharing workshops at district level. Moreover education officers came from the background of teaching in secondary schools except in Maharashtra where some officers had experience of teaching at the primary level.

Absence of training and faulty promotion policy accounts for, atleast in part, the reluctance of education officers to give demonstration of teaching at the school complex or school level during visit.

The implication of inadequate travel funds, heavy administrative work load, and long and difficult distances, particularly in Assam, Orissa and Madhya Pradesh, is to develop an effective supervision at the school and school complex or cluster level. Peer teacher support within and across schools in the cluster and inter school collaborative school improvement programmes could be designed to improve learning environment in schools leading to improved learning achievement. Intensive training programmes alongwith action research at the school and cluster level should form a part of the internal supervision. For details refer to teacher study¹³ and multisite action research project for inclusive schooling carried out at NCERT¹⁴.

Teaching-Learning Process

The states have mostly regional language as the medium of instruction (Table 6).

Table 6: Students with different mother tongue than state language and difficulty in understanding teachers' language in the classroom

State	Mother tongue as medium of instruction		Difficulty in Understanding Teachers Language	
	Min.	Max.	Min.	Max.
HR	55.3	98.2	6.1	31.2
MP	85.4	*100.00	1.3	27
OS	71.2	95.5	13.1	25.2
TN	78.1	94.8	NA	NA
AS	11.1	97.5	0.2	23
KTK	NA	NA	NA	NA
KLA	NA	NA	NA	NA
MHA	80.3	85.2	22.6	81.6

* Panna, Satna, Rajnandgaon, Dhar districts in Madhya Pradesh

¹³ N.K. Jangira, Ajit Singh and S.K. Yadav (1994), *Ibid.*

¹⁴ MIIRD (1993), *Education for All: The Indian Scene*, Ministry of Human Resource Development, New Delhi.

In class 4 in Karbi-Anglong district in Assam there were only 4.1 percent children whose mother tongue was Assamese while Assamese was the medium of instruction. In Rayagada district of Orissa 28.8 percent students and in Dharamapuri district of Tamil Nadu 21.9 percent students were in this category. In other districts also 4-20 percent students did not have the language of the state which is the medium of instruction as mother tongue. Most of these children were tribal, while others were minority language students in the bordering districts, or those belonging to migratory labour. It results in difficulty in understanding the textbooks as well as teacher communication.

About a quarter of the class 5 or 4 students covered in the study except in Maharashtra reported difficulty in understanding the language of the teacher. In Parbhani district of Maharashtra it was exceptionally high at 81.2 percent and in Sirsa district of Haryana it was 31.2 percent. It might be due to several reasons. Firstly, tribal students who speak a different language at home than the school might have difficulty in understanding non tribal teachers' language. Secondly, some children in border districts speak different mother tongue at home. Thirdly, teachers from different mother tongue background might be using mixed language in the classroom. Lastly, the communication skills of the teachers leave much to be desired. The net result is uneven understanding of teacher communication in the classroom affecting the teaching-learning process adversely. It has implications for the design of the inservice training programme for the teachers. The teachers also indicated communication and presentation as important areas to be covered in in-service training. Research in communication in the classroom will provide specific nature of difficulties.

The process of teaching learning was not studied through classroom observation. Students and teachers were asked about classroom activities. The range of class 5 or 4 students having the opportunity to read aloud in the classroom was quite wide (Table 7). It was the highest in Madhya Pradesh with as low as 12.3 percent in Rajnandgaon district and 68.3 percent in Betul. In some districts more than two third of the students did not get this opportunity (Dhubri in Assam, Betul in Madhya Pradesh, and Aurangabad in Maharashtra). More than half of the students reported no dictation except in Haryana and Assam.

Table 7: Class 5 or 4 students reporting regular activities in the class

State	Reading Aloud		Dictation		Feedback on Tests	
	Min.	Max.	Min.	Max.	Min.	Max.
HR	52.6	55.6	55.5	64.7	58	83.9
MP	12.3	68.3	8	45.9	16.1	56.0
OS	88	96.7	91.5	98.7	19.6	36.2
TN	44	61.3	13.2	40.8	34.2	55.1
AS	21.2	40.8	3.5	50	0.8	8.5
KTK	NA	NA	NA	NA	NA	NA
KLA	22.5	61.0	9.0	10.2	NA	NA
MHA	37	44.3	20.7	34.9	20.3	35.8

Nearly all students reported regular tests. But interviews revealed that students perceive term examinations as regular tests. Continuous evaluation to use improvement of learning was not reported by the students during the interview. Even in these limited tests feedback was reported by less than half of the students except in Haryana, Betul district in Madhya Pradesh and South Arcot district in Tamil Nadu. It was the lowest in Assam. There were districts where less than one fifth students reported feedback. Even where feedback was provided, it was merely giving of marked papers. Selective probing by the visiting teams revealed that practically no feedback was provided for using test results for improving learning.

Home work was reported by most of the students, but about one third of the students and, in some districts even more, reported that home work was not corrected regularly. Teachers help to remove difficulty of students was also reported by only a quarter of students.

In Tamil Nadu and Kerala, all students reported teachers coming to the class regularly. In other states 10-15 percent students reported that teachers did not come to the class regularly. The teacher absenteeism is higher in Madhya Pradesh, Assam and Orissa. The student absenteeism in these states therefore is not unnatural. When the teacher did not come to the classroom, most of the students reported waiting or playing. In multigrade teaching, most of the teachers reported students to work on their own or under the charge of a peer, when they moved to other class to teach new material after this.



School Facilities and Participation

The availability of schools in different districts in the states of Kerala and Tamil Nadu is not a problem. Most of the schools were available within below 2 kilometers. But in other states the availability of schools was still a problem. In districts in Madhya Pradesh, Assam, Orissa, Haryana and Maharashtra, the distance between primary schools more than 2 kms was high. The percentage of such schools was 40 percent in Shahdol in Madhya Pradesh, 42 percent in Aurangabad (most of these schools in Soegaon block). In other districts in different states nearly a quarter to one third schools were at a distance of more than two kilometers except in Kerala and Tamil Nadu. Discounting the crude distance perceptions, it implies that there is a need for more schools or non formal education centres in small habitations. Micro planning should be undertaken in these districts for assessment of the requirement of additional schools.

School buildings were available in nearly 80-90% of the schools. Another 5-10% of the schools were located in rented buildings. In Ratlam district in Madhya Pradesh 19 percent schools were being run in rented buildings. In Assam four fifth of the school building have single rooms for all the classes. About one third of the buildings in all the districts of Maharashtra. In other districts in different states except in Kerala the percentage of such schools was 10-20 percent. Number of school buildings with five classrooms in Dhar and Tikamgarh in Madhya Pradesh and in Karbi-Anglong in Assam was zero. In the remaining districts except in Kerala and Tamil Nadu the percentage was 2-12. It implies seating of more than one class in the same room. It also implies the need for extension of school buildings to meet the requirement of increased enrollment and improved retention in the DPEP districts.

In addition to the additional rooms required, the quality of buildings need to be addressed. Large number of school buildings in Assam were fragile and needed major repairs. In the absence of regular maintenance most of the primary school buildings in all the districts require maintenance and repairs. Immediate surveys could be carried out to allocate rational funds for carrying out these repairs and maintenance work. Less than 5 percent of the schools had separate toilet facilities for girls. More than half of the schools did not have drinking water facilities. Both these facilities are required for healthy atmosphere in schools. Survey of building construction and reparis and maintenance is required.



Class Size and Dropout

The school records were either not maintained or poorly maintained in primary schools in all the districts. The names of the students continue in attendance registers even after they leave the school. It was difficult to estimate the drop out rate. The dropout can be estimated from two sources, the decreasing class sizes and the ratio of class five students to class 1 enrollment. The figure 4 gives average size of classes 5 or 4 and class 1. The range of class 1 size was the highest in Maharashtra 51.4 in Aurangabad to 68.5 in Nanded. It declined to about 38 in class 4. Similarly, in Haryana it declined from 47.80 to 32.80. There was a decline of about 20 percent in the districts with minimum class size. In Madhya Pradesh class 1 size ranged from 20.90 in Sarguja to 39.47 in Betul. The minimum class 4 size was 10.8 in Raigarh and maximum of 34.04 percent in Betul. Similar situation prevailed in Orissa. The attendance in rural areas was much lower than the class size.

The drop outs could not be computed because of lack of reliable school records. Household survey was the alternative.

Teacher Pupil Ratio

There is a wide variation in teacher pupil ratio. The discrepancy between the apparent and effective teacher pupil ratio was due to unfilled teacher posts except in Assam where the number of teachers in position was more than the sanctioned strength in Morigaon.

Achievement

Class 5 or 4 Student Achievement in Reading

Reading test comprised two sections. The test on word meaning consisted of 40 items and reading comprehension of 44 items. Class 4 test consisted of 20 word meaning items and 24 reading comprehension items. The states have been grouped according to the end of the primary cycle class 5 or 4. Table 8 gives minimum and maximum scores on the Reading test in the states. The range of average scores is the highest in Madhya Pradesh because the number of districts is large(19).

Fig. 4 : Average Class Size

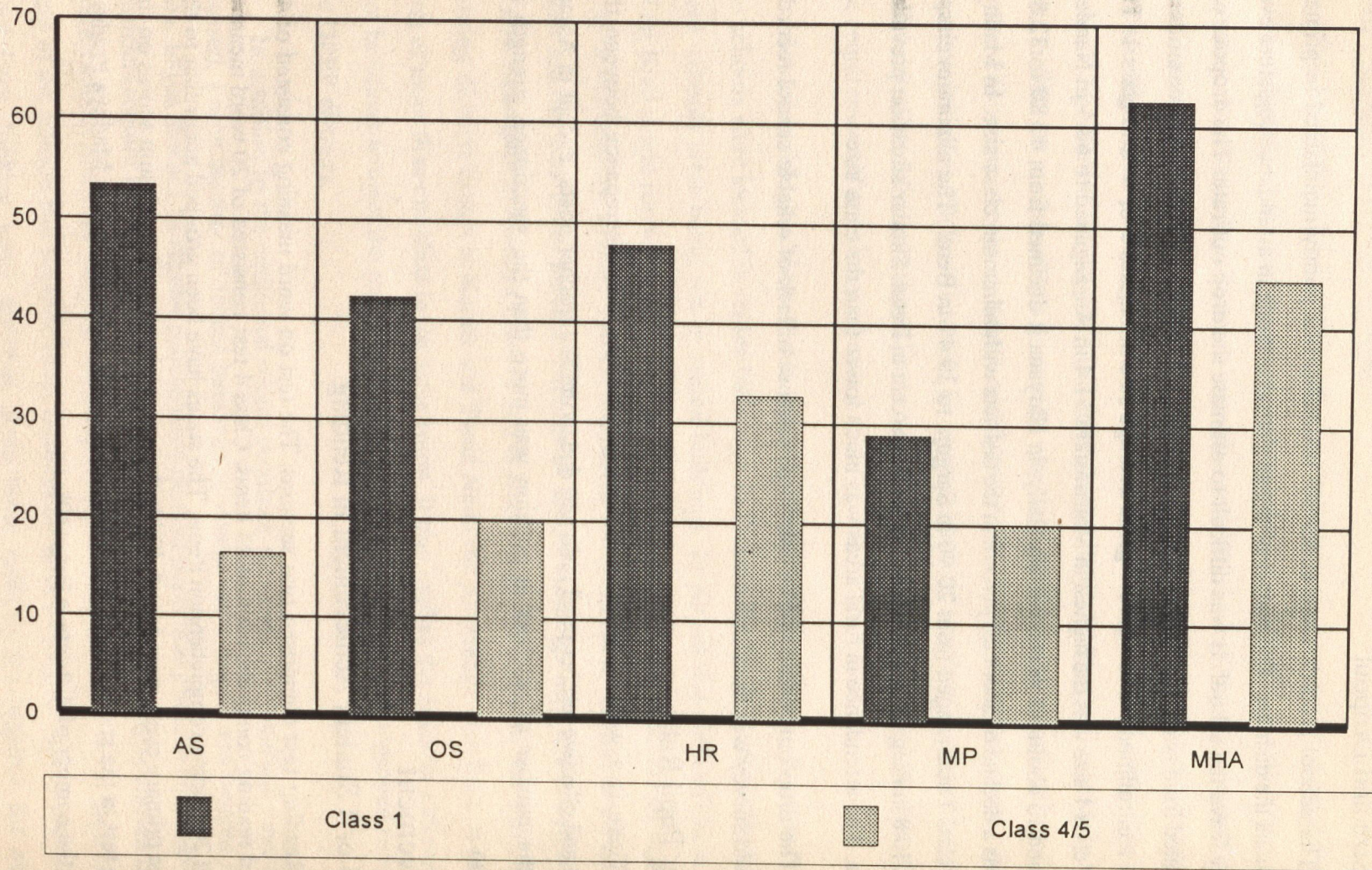


Table 8: Class 5/4 student achievement in reading

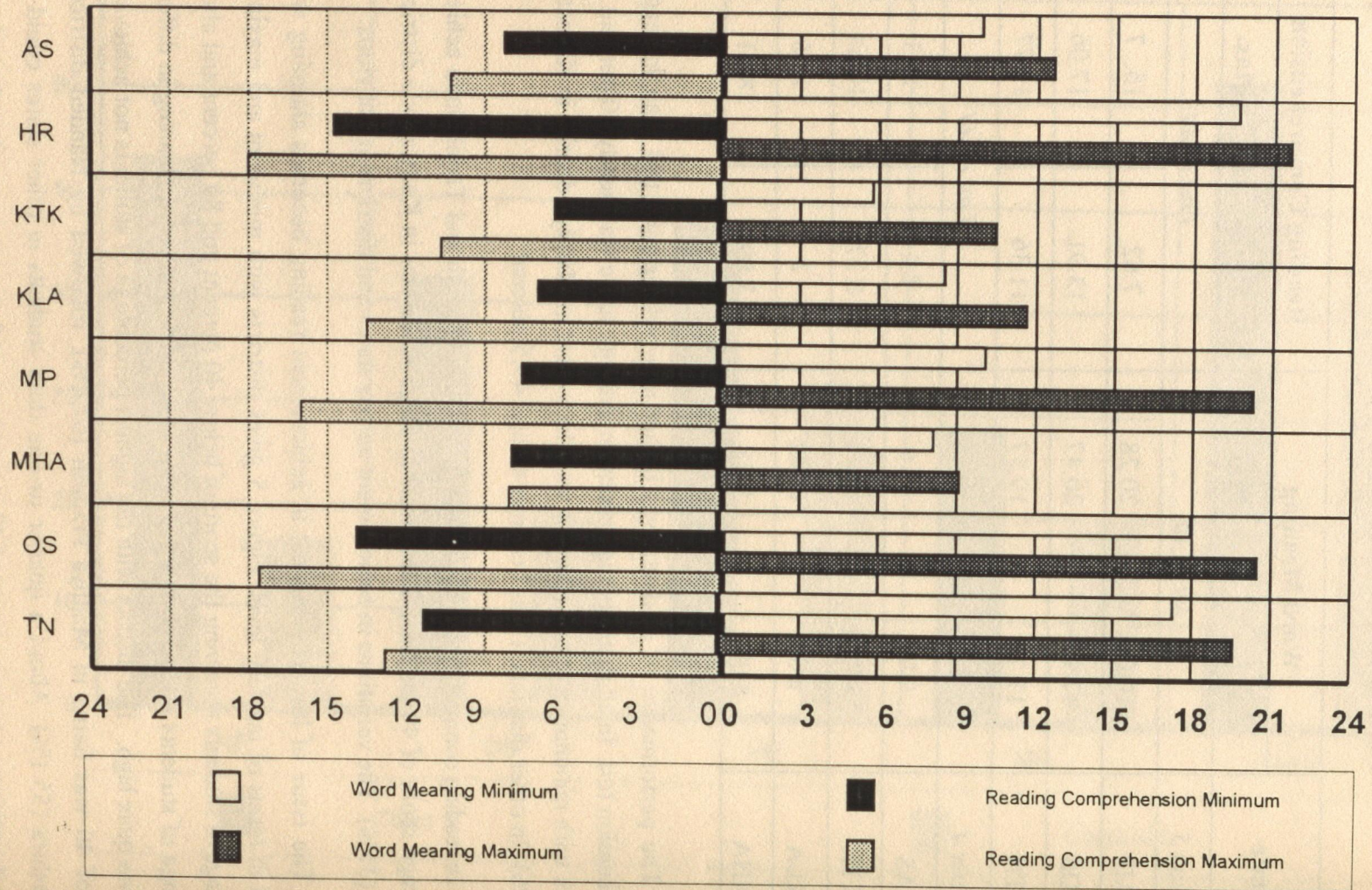
State	Word Meaning		Reading Comprehension	
	Min.	Max.	Min.	Max.
<i>Class 5</i>	<i>Out of 40</i>		<i>Out of 44</i>	
MP	10.06	20.28	7.62	16.7
OS	17.93	20.47	13.91	17.06
TN	17.27	19.57	11.36	12.77
<i>Class 4</i>	<i>Out of 20</i>		<i>Out of 44</i>	
AS	9.9	12.6	8.3	10.3
KTK	5.77	10.44	6.37	10.68
KLA	8.5	11.62	7	13.5
MHA	8.09	9.08	7.99	8.11

The performance of students was higher in word meaning test than in reading comprehension test. In all districts the maximum average score was nearly 50 percent. In districts with minimum average score, it was the lowest in Mandya district in Karnataka (28.85%). In other districts it was between 40 and 49.5 percent.

In reading comprehension no district in Madhya Pradesh and Tamil Nadu achieved an average score of 40 percent. The lowest average score was in Kasaragode district of Kerala (35%). The variations in achievement across states and districts are obvious.

The issue of low achievement in achievement reading becomes alarming when viewed in terms of mastery level. Figure 5 gives districts with minimum and maximum percentage of students receiving the score of below 40 percent and 80 percent and above. The range of students not achieving the score of 40 percent in word meaning in different states was quite high. The district with the highest percentage of students not achieving a score of 40 was Satna in Madhya Pradesh (67.4%), followed by Nanded district of Maharashtra (55.1%). About a quarter to one third students in other states could not achieve the minimum average score of 40 percent in word meaning test. In other districts it ranges from half to two third students. Students achieving mastery level (80 percent and

Fig. 5 : Students Achieving Below 40% in Reading
(Class 4/Class 5)



above) was about 5 percent or a little more in most of the districts. Madhya Pradesh had three districts with no student reaching the mastery level.

In reading comprehension the students scoring below 40 percent was alarmingly high in Satna district in Madhya Pradesh (91.1%). In other states also several districts had more than two third districts scoring below 40 percent. Almost half of the students in all other districts were in this category.

The students scoring 80 and above were very low (10%). In Tikamgarh district in Madhya Pradesh no child could achieve 80 percent and above. In Sirsa district in Haryana, Gajapati district in Orissa and Karbi-Anglong district in Assam only 1 percent students achieved mastery.

Achievement in Mathematics

Achievement in mathematics was still lower. The maximum average score was the lowest in Tiruvannamalai in Tamil Nadu (29%), followed by Parbhani in Maharashtra (31%). The district with minimum average score was Satna in Madhya Pradesh (17.5%), followed by about 18 percent in Dhubri. In Tamil Nadu, Assam, Maharashtra and Haryana no district had an average score of 40 percent.

Table 9: Class 5 or 4 student achievement in mathematics (out of 40)

State	Min.	Max.
HR	13.85	15.82
MP	7.01	17.48
OS	13.3	16.6
TN	11.08	11.61
AS	7.23	8.31
KTK	11.66	19.04
KLA	13.6	19.09
MHA	10.88	12.29

For mathematics a comparison can be made with the scores of the All India Survey of Mathematics conducted by NCERT in 1965 - 66¹⁵. Though the scores are for the states but it provides an indication about the direction of class 4 student achievement in mathematics. The average score was 41 percent in Assam which is now between 17 - 18 percent. It is a steep decline. In Haryana it was 37 percent in 1966 which is now 37.40 percent. In Kerala the average score in 1966 was 43 percent which was lower Malapuram (34 percent) but was higher in Wayanad (47.5 percent).

In Madhya Pradesh there was a steep decline in some districts from an average of 36 percent to about 17 percent in Satna but it has improved to 45 percent in Rajnandgaon. In Maharashtra it has declined from 41 percent to 27 - 31 percent. Orissa had an average score of 44 percent which is now 33- 41 percent. It indicates decline in all the states except Haryana and Kerala.

More than four fifth students of the five states could not achieve a minimum score of forty percent (Figure 6) in Satna district of Madhya Pradesh, Sirsa in Haryana, Kalahandi in Orissa, Aurangabad in Maharashtra and Karbi Along in Assam. Only in Dhubri the percentage of such students was below fifty. The students achieving 80 percent and above was zero in the three districts of Haryana and eleven out of nineteen districts in Madhya Pradesh and Aurangabad district in Maharashtra. In these districts also it was less than one percent and about 2-10 percent in a few districts. It confirms the low level of learning in class 5 or 4 students in mathematics.

Areas of Difficulty

The areas of difficulty were identified through micro analysis of the data. The areas of difficulty covered items which even 40 percent students could not do correctly. Table 10 summarises areas of difficulty in mathematics.

In reading comprehension students experienced difficulty in searching information not available directly in the paragraph and in questions requiring inferencing. The most difficult was to give central idea for title to a paragraph. It implies that reading comprehension needs to be stressed in teaching.

¹⁵ S.S. Kulkarni, *Ibid*

Fig. 6 : Students Achieving below 40% in Mathematics

(Class 4/ Class 5)

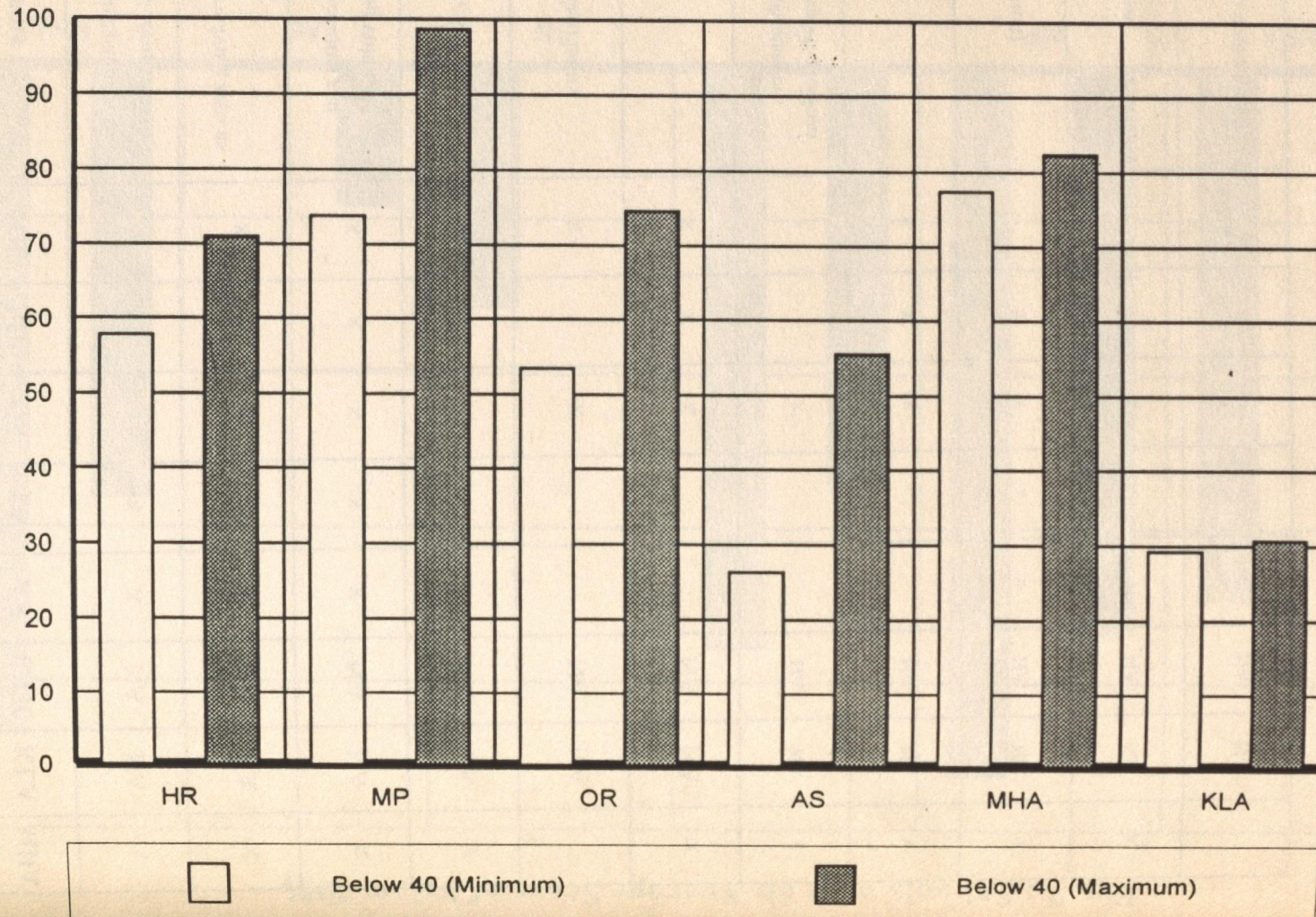


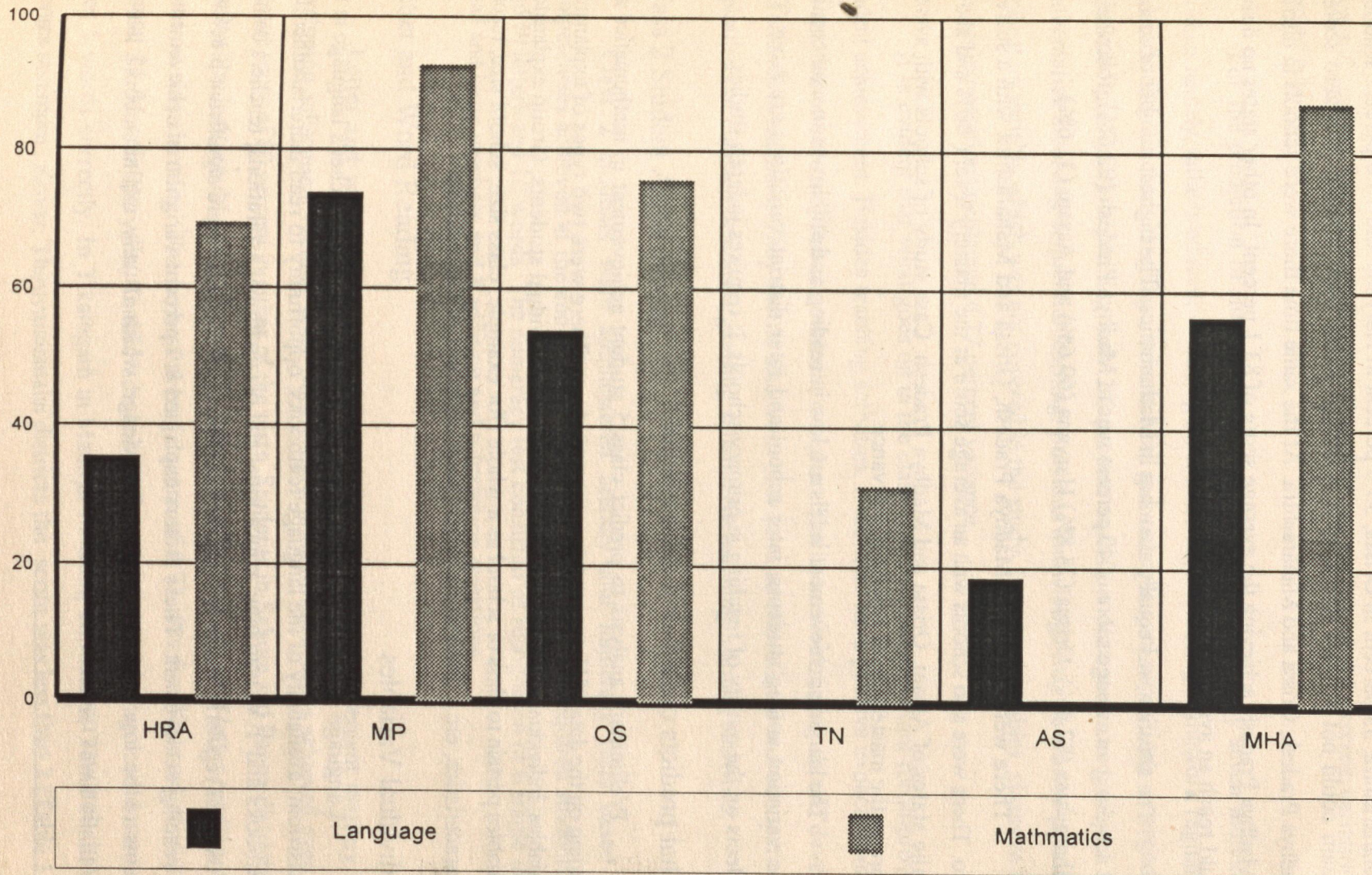
Table 10: Areas of difficulty in class 5 and 4 Mathematics

Items	HR	MP	OS	TN	AS	KTK	KLA	MHA
Addition and Subtraction in same item in statement form	x	x		x	x	NA	NA	x
Multiplication involving zero as one number	x	x	x	x	x	NA	NA	x
Conversion of measures and weights, including volume	x	x	x	x	x	NA	NA	x
Factors and multiples	x	x	x	x	x	NA	NA	x
Addition of standard hours	x		x			NA	NA	
Fractions	x	x	x			NA	NA	x
Items involving application of mathematical concepts to problems	x		x			NA	NA	x
Decimal	x	x	x			NA	NA	x
Division (Estimation)		x	x	x	x	NA	NA	x
Geometrical shapes		x	x			NA	NA	x
Number reading/recognition				x	x	NA	NA	

School Variations

The variation among schools was marked in achievement in Reading and Mathematics. Figure 7 gives percentage of schools achieving an average score of below

Fig. 7 : Schools with an Average Score of below 40%



40 percent in the states. As high as 73.9 percent schools in Madhya Pradesh, 56.3 percent in Maharashtra, 53 percent in Orissa, 35.5 percent in Haryana and 18.6 percent schools in Assam could not achieve this level in Reading. There were schools with zero score in Madhya Pradesh, Orissa and Maharashtra. At the same time there were schools in districts in Madhya Pradesh achieving the average score of 83.1 percent. In other states no district could reach an average of more than 80 percent.

The situation was equally alarming in Mathematics. The highest number of schools not achieving an average score of 40 percent was in Madhya Pradesh (92.6%), followed by Maharashtra (87.4%), Orissa (75.8%) Haryana (69.6%) and Assam (31.6%).

There were schools in Madhya Pradesh, Orissa and Maharashtra with a score of zero. There were also schools with an average score at the mastery level (80% and above) in the states of Assam, Orissa and Madhya Pradesh. Case study of schools with average score at the mastery level will be of relevance.

The learning achievement levels are low in reading and still lower in mathematics. The variation among students; inter school and inter district variations are large. This reflects on the quality of teaching in primary schools. It requires indepth studies.

What predicts class 5 or 4 achievement?

Preliminary analysis to predict class 5 student achievement in mathematics and reading on the data of Haryana state was carried out. There were two types of explanatory variables; individual explanatory variables relate to individual students. Group explanatory variables pertain to class or school as a whole (for example: class size, school size, teacher characteristics, etc.). Interesting results have come out of this analysis.

Individual Variables

Language of instruction and difficulty in understanding teacher's language in the classroom; availability of the language textbooks, opportunity to read material other than textbooks and T.V. watching; educational and occupational aspirations; teachers coming to the class regularly; receiving dictation and feedback on tests were significant predictors of reading achievement. These factors explained 8.9 percent variation in achievement. It seems to be low because previous knowledge which usually explains 10-15 percent variation was not covered in the study.

* Since analysis was received late prediction tables have not been given.

In group explanatory variables of asking children to read from the textbook on their own and reading from the textbook and explaining, explained 9.0 percent variation in reading achievement.

For the prediction of student achievement in mathematics only seven individual variables namely, father's education, reading other material, correcting homework regularly, understanding teachers language, educational and occupational aspirations emerged as significant predictors explaining only 2.6 percent variation. In a structured subject like mathematics involving sequential learning, previous knowledge may be a more potential explanatory variable which was not covered in the study. In group variables classsize and teacher expectations explained 6.27 percent variance.

It is evident that what goes on in the classroom is more important for improving student achievement. Besides teaching activities, if teachers have positive expectations of the students to succeed, the achievement is higher. The in-service training should develop this attitude in teachers. They should also learn how to raise educational and occupational aspirations of children besides organising substantive teaching-learning activities.

Class 2 Student Achievement

Class 2 students were administered literacy and numeracy tests based on competencies achieved at the end of class 1 orally. The literacy test required students to read 10 letters and 10 words. The numeracy test consisted of recognition of 6 single digit small and large numbers and 8 addition and subtraction questions.

Letter and Word Reading

Letter and word reading are basic skills which require 100 percent mastery for developing subsequent reading skills. Surprisingly, none of the districts achieved even an average score of 80 percent in either of the tests. Students in Sehore and Panna districts in Madhya Pradesh, could not read even 5 words correctly. In the case of letter reading, the situation was alarming. The highest average score of 8.73 was for Wayanad district in Kerala. Students in Haryana, Tamil Nadu and Maharashtra on an average could not read even 5 words correctly. In Tikamgarh in Madhya Pradesh, Karnataka, Tamil Nadu the average minimum, Kovar, Thiruvannamalai districts the score was less than 2 (Table 11).

Table 11: Class 2 achievement in language

State	Letter Reading		Word Reading	
	Min.	Max.	Min.	Max.
HR	6.14	6.43	3.84	4.63
MP	3.91	7.46	1.92	5.5
OS	6.25	7.04	5.56	6.41
TN	4.67	5.71	1.82	2.36
AS	5.1	7.2	3.8	6.2
KTK	5.89	6.62	1.78	3.51
KLA	6.35	7.21	6.37	8.73
MHA	4.84	6.79	2.68	4.71

Micro analysis revealed that 47.6 percent of students in class 2 in Panna district of Madhya Pradesh could not read even a single letter correctly (Figure 8). Nearly one third students in Sirsa district of Haryana, Karbi-Along district of Assam and Nanded district of Maharashtra failed to read even a single letter correctly. Similar percentage of students could not read atleast 4 letters correctly. Between 15 - 23 percent students could read atleast 8 letters correctly.

The situation was more alarming in the word reading test. In Panna district of Madhya Pradesh (75.1%), in Nanded in Maharashtra (54.1%) and in Karbi-Anglong district in Assam (38.4%) students could not read even a single letter. Nearly a quarter to half could achieve mastery level in some districts.

Number Recognition and Addition and Subtraction

The number recognition and simple addition and subtraction are basic numeracy skills to be mastered by all students for subsequent levels. The low average (see Table 12) indicates that these skills were not mastered by many students. In addition and subtraction, the learning was still lower. The average score was the lowest in Tamil Nadu where it was less than 40 percent. All states except Assam had districts with less than 40 percent average score (For example Sirsa in Haryana, Panna in Madhya Pradesh, Thiruvannamalai in Tamil Nadu, Nanded in Maharashtra).

Fig. 8 : Class 2 Levels of Learning in Reading

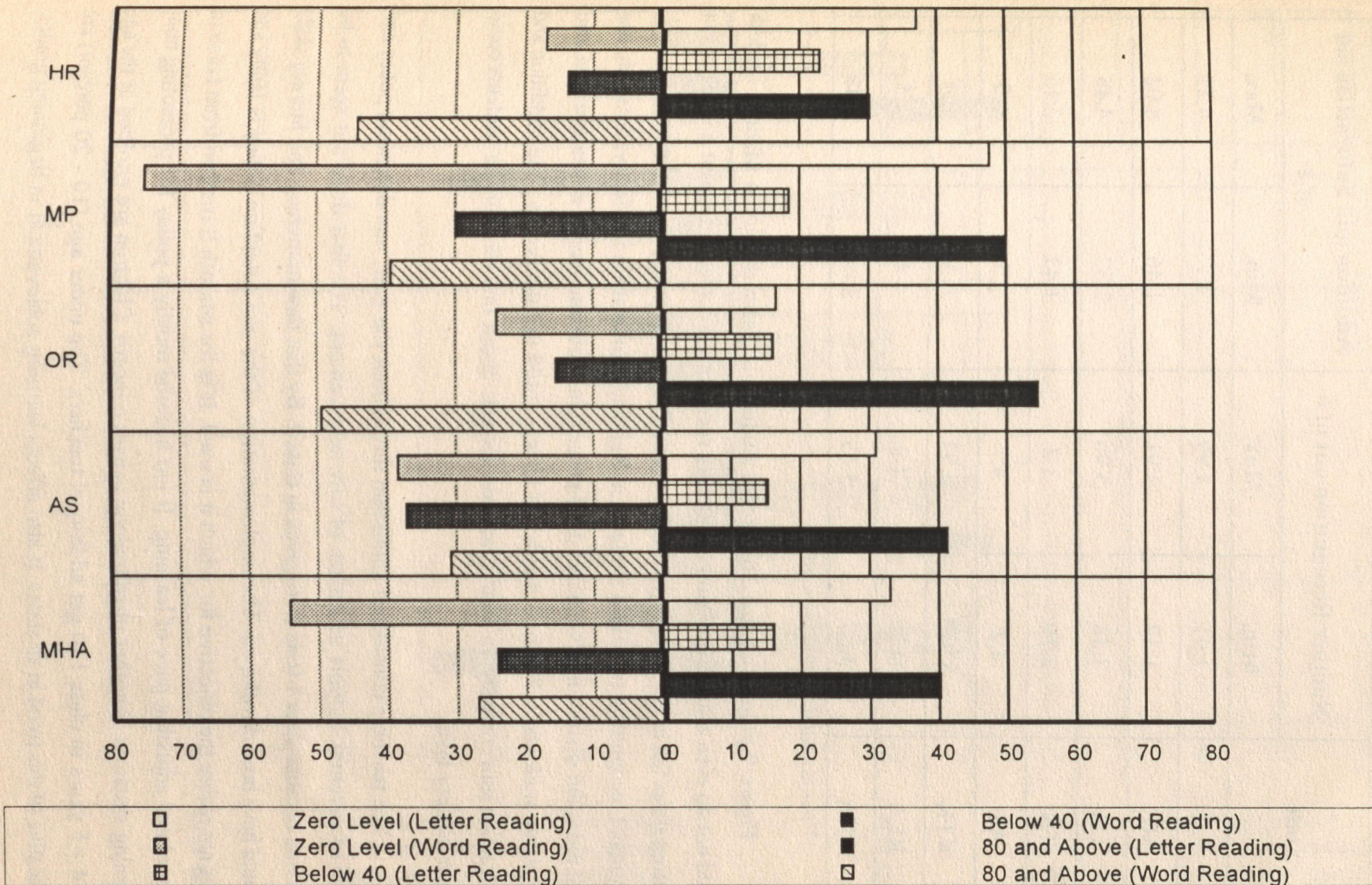


Table 12: Class 2 achievement in mathematics

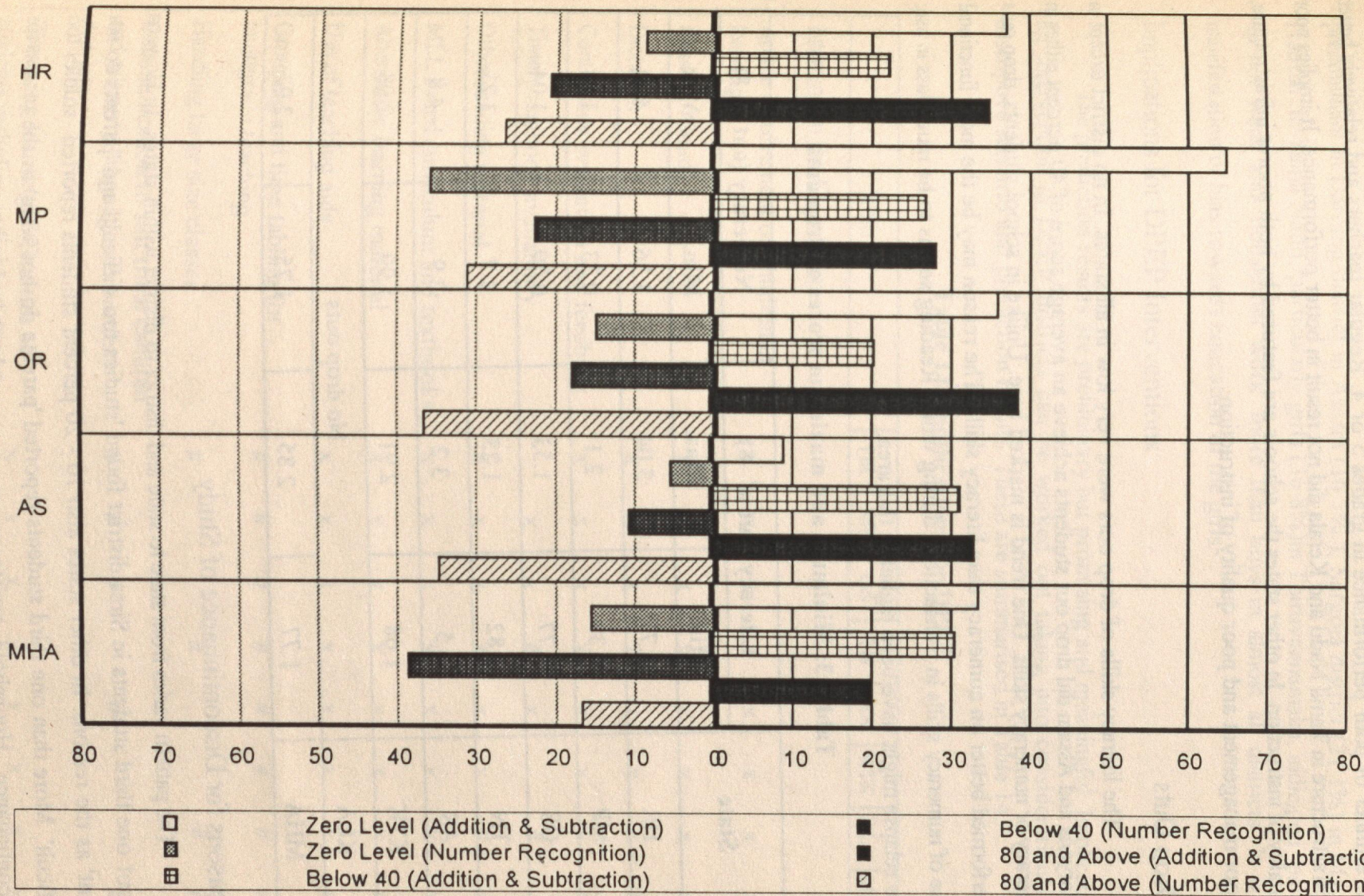
State	Number Recognition out of 6		Addition and Subtraction out of 8	
	Min.	Max.	Min.	Max.
HR	1.91	3.99	1.7	4.27
MP	1.37	3.91	1.46	4.02
OS	3.38	3.96	3.32	4.48
TN	2.79	3.2	1.47	2.15
AS	4.2	4.7	4.5	6.3
KTK	5.97*	8.93	NA	NA
KLA	4.2	4.8	3.4	4.5
MHA	3.08	3.57	2.84	3.48

* For Karnataka scores are totalled

Figure 9 points out that 36 percent students in Satna district in Madhya Pradesh could not do even a single question of number recognition correctly. About 5 - 10 percent in other states fall in this category. About one-fourth students could reach the mastery level. In number recognition two third students in Rajnandgaon district in Madhya Pradesh, one third in Dhubri district in Assam and 16.7 percent in Parbhani district in Maharashtra, and a quarter students in Phulbani district of Orissa could not do even a single addition and subtraction sum correctly. In Tamil Nadu and Kerala, about one third of the students could reach mastery level.

The teachers considered admission throughout the year, non detention policy and lack of parental support as causes of low achievement. The first does not seem to be relevant because class 1 tests were given in class 2. By that time numeracy and literacy skills should have been developed. The implementation of the non detention policy is faulty and does not realise the objective for which it is used. It is for smooth transition from home to school and adjusting pace of learning. It has become mostly a policy for promoting non-learning situation. Another phenomenon causes concern. Children are enrolled at the age of 4 - 5 years in class 1 to get additional teachers. The under age (10 - 20 percent) are indicative of this trend in all states. It also affects learning achievement in beginning grades.

Fig. 9 : Class 2 Levels of Learning in Mathematics



Poor performance of class 2 students on literacy and numeracy tests is the forerunner of poor performance in grades 5 or 4. Regular teachers and relatively better infrastructure in Tamil Nadu and Kerala did not result in better performance. It implies poor quality of instruction. In other states the schools are featured by both poorer infrastructure, poor management and poor quality of instruction.

Drop Outs

The literacy skills of drop outs were very low in all states. In no district except in Haryana and Assam did drop out students achieve an average score of 40 percent either in literacy or numeracy skills. One trend is marked here. Unlike in school students, drop outs performed better on numeracy than literacy skills. The reason may be the more functional use of numeracy skills in transactions during work. Reading seems to be much less in use. So relapse might have been higher in this area.

Table 13: Minimum and maximum scores of drop outs

State	Literacy (out of 8)		Numeracy (out of 8)	
	Min.	Max.	Min.	Max.
HR	2.77	3.04	3.36	4.22
MP	0.35	2.1	0.33	1.82
OS	0.77	1.53	0.79	1.04
TN	0.82	1.23	1.7	3.23
AS	2.5	3.2	2.9	4.8
KTK	1.68	2.91	1.99	2.98
KLA	No drop outs			
MHA	1.77	2.85	1.75	2.07

Reasons for Discontinuance of Study

The pattern varies from state to state and district to district within states. In Haryana about one third students in Sirsa district found 'studies too difficult' and 'parents do not want' as the reasons. In other states also 10 - 20 percent students reported 'studies too difficult'. More than one third students reported 'parents do not want' as the reason for discontinuance. Household assistance as reason for discontinuance of studies was

predominant in Darrang district in Assam (16.7%), Sargoja district (21.1%) in Madhya Pradesh. In Tamil Nadu, particularly girls (36.8%) in Thiruvannamalai, indicated 'parents do not want' and 'household work' more than boys in almost all districts. It is the manifestation of bias towards education of the girls.

Implications for DPEP Interventions

The prediction results are preliminary but promising and meaningful. Implications for intervention in DPEP districts can be worked out taking into consideration both descriptive scenario and prediction results. These are summarised in Table 14.

Table 14: Implications for DPEP

Item	HR	MP	OS	TN	AS	KTK	KLA	MHA
<u>Learning in the Classroom</u>								
Active involvement of children in learning	x	x	x	x	x	x	x	x
Reading Aloud	x	x	x	x	x	x	x	x
Dictation	x	x	x	x	x	x	x	x
Continuous evaluation and feedback	x	x	x	x	x	x	x	x
Timely textbook availability		x	x	#	x		#	
Other reading material	x	x	x	x	x	x	#	x
MLL based curriculum and textbooks	x	x	x	x	x	x	x	x
Alternative learning material	x	x	x	x	x	x	x	x
Use of teaching aids	x	x	x	x	x	x	x	x
Grouping and time tabling for multigrade teaching	#	#	#	#	#	#	#	#
Handling large size classes	#			#			#	#
Communication to suit tribal children and minority languages in border districts	#	#	#		#			#
Removing learning difficulties of students including individual needs	x	x	x	x	x	x	x	x

*x Stands for data based; # stands for partly; * stands for expert's suggestion*

Item	HR	MP	OS	TN	AS	KTK	KLA	MHA
<u>Teacher and Teacher Development</u>								
Teacher empowerment	x	x	x	x	x	x	x	x
Teacher based and school based inservice training	x	x	x	x	x	x	x	x
Interaction and collaboration among teachers in the schools	x	x	x	x	x	x	x	x
Teacher training capacity (as suggested in teacher study)	x	x	x	x	x	x	x	x
Networking with other schools for school improvement	x	x	x	x	x	x	x	x
Action research for improvement of teaching	*	*	*	*	*	*	*	*
Access to teacher guide and class textbooks, MLL grade etc.	x	x	x	x	x	x	x	x
<u>Head Teacher</u>								
Providing academic guidance	x	x	x	x	x	x	x	x
Staff meetings for improving performance	x	x	x	x	x	x	x	x
School management training (including leadership training, training in maintenance of school records)	x	x	x	x	x	x	x	x
Getting community involved in school management	#	x	x	x	x	#	#	#
Link with school cluster head and BEO	x	x	x	x	x	x	x	x
Demonstration of good teaching	x	x	x	x	x	x	x	x
Making teacher guides and school textbooks available								
<u>School facilities</u>								
Microplanning for extension or construction of new buildings, toilets, drinking water, etc.	x	x	x	x	x	x	x	x

Item	HR	MP	OS	TN	AS	KTK	KLA	MHA
Survey of school buildings for maintenance and repairs	x	x	x	x	x	x	x	x
Teaching aids	x	x	x	x	x	x	x	x
Library books for additional reading	x	x	x	x	x	x	x	x
<u>Teacher Representation in Services</u>								
Representation of socio-cultural groups of teachers			x	x			x	
Increasing the representation of female teachers	x		x		x		x	x
Increasing the representation of SC teachers		x			x		x	
Increasing representation of ST teachers			x	x			x	
<u>School Management</u>								
Teacher attendance	#	x	x		x	#		#
Management of multigrade teaching	x	x	x	x	x	x		x
Local need based procurement of materials	x	x	x	x	x	x	x	x
Rational development of resources	x	x	x	x	x	x	x	x
Increasing instructional time	x	x	x	x	x	x	x	x
Improving student attendance	x	x	x		x	#		#
Maintaining school records	x	x	x	x	x	x	#	x
Internal supervision	*	*	*	*	*	*	*	*
Monitoring learning achievement	*	*	*	*	*	*	*	*
Mobilisation of community support	*	*	*	*	*	*	*	*

The major areas of intervention from the Baseline Study on the assessment of learning achievement indicates school based and teacher based in-service training is to be looked not as a periodic activity but a continuous teacher development activity supported by collaboration among teachers within the school and across schools. Greater dependence on internal supervision and supervision capacity within the school cluster will have to be

developed. Curriculum and textbooks following MLL approach with teacher guide need to be encouraged. The major investment should be made in learning material for students, teacher training, internal supervision and improvement of threshold school facilities.

Methodological Issues

The baseline assessment study (BAS) was completed within the constraints of time and manpower. Several issues relating to design, methodology and analysis arise from this study. Some of these issues are endemic to social science research while some are inherited from the time constraint. It will be worthwhile to consider some of the issues for the improvement of this type of studies and those emerging from the present one. These issues are considered in the context of the design, methodology and analysis.

The study so far used survey design which yield descriptive profile and correlates even in multivariate analysis. The determinants are based on association. The cause and effect analysis relationships are not established. Quasi experimental studies are required to support correlational and prediction studies. Should these experimental studies be done on independent samples or on the subsamples of this study. Experimental studies are costly and time consuming. These cannot be as large scale as this? What should be the size and scope of these studies? Should these be independently designed studies or multisite replication studies within a standard design? These designs should be considered in the context of informing policy decisions through complementing correlational and prediction studies. The issue is the mix of programmatic and individual aptitude oriented research.

Learning achievement study is to be replicated in the third and the sixth year of the programme will be subsequent assessment be in the same school and on the same class 2 students or will it be on a new sample? Both approaches have advantages and disadvantages. For example, the advantage of assessment of the same class 2 students in the same schools will provide highly potential explanatory variable of learning aptitude (previous knowledge base). The disadvantage is the high mortality rate. The advantages and disadvantages need to be weighed.

The generalisability of studies does have implications for these districts. But generalisation for the whole state poses problem. How will these policy decisions be formulated for the state component? Will these be valid for other districts which will be influenced by the decisions regarding the state component? How will the components for implementation in other districts be picked up? Will it require further studies to apply to other states? Can such research be built in the study design or simultaneous studies be

mounted through sponsored research for further validation of the findings? It would result in increased relevance and cost effectiveness.

Baseline study concentrated on cross-sectional research methodology. The process variables were inferred from the perceived experience with learning and supervision activities. Direct evidence on the process were not studied. Should BAS not include a small process study on subsample? For example, how textbooks are used; how teaching aids are used; teacher-student, and student-student interactions; and teacher-headteacher interactions need observational study. Qualitative information and process study could provide useful information for designing more relevant interventions.

The unit of sampling in studies on achievement has shifted from individual student alone to student within the school and home environment. The interactive effects of the three sets of variables are relevant for student learning achievement. It has implications for the design and analysis of multilevel studies of school effectiveness. The disaggregated individual and group explanatory variables need to be conceptualised and used in this type of research. With advanced statistical techniques and computer technology, it is possible to use multilevel modelling. The skills to conduct such studies need to be developed through DPEP research capacity building provision.

Estimation of drop out pose problem because due to the absence of authenticated enrollment and drop out records. Will crude estimates continue to suffice or should we study discrepancy between these estimates and household survey? Should we work out some adjustment mechanism? A way is to be found out till MIS starts providing reliable information.

We have used standardised achievement tests in BAS. The curriculum based on MLL is being developed. Revised curriculum will be implemented by the time the second learning assessment is undertaken. Should new tests be developed and standardised or the same tests continue to be used? The present BAS did not include the assessment of achievement in environmental studies. The time constraints and non-availability of standardised tests precluded its inclusion. Should these be included now? If so, what type of tests should be developed for the assessment of achievement in environmental studies? Another important dimension of primary education is non-scholastic area of the curriculum. Should this also be assessed? If so, what kind of tools should be used?

These issues are by no means exhaustive. These are only for the stimulation of discussion. Many more issues will flow from the discussion.

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