

## **Resources in Primary Schools: A Challenge for India**

V. K. JAIN AND MAMTA AGRAWAL\*

### **Context**

Education of children is the primary concern of all countries. In the last two decades, there has been a movement called 'Education for All' to provide access to all children to school. As a result the enrolment of primary schools which was 78 per cent in the year 1990 increased to 86 per cent in the year 2004 around the world. India was no exception and about 123 million children were enrolled in primary classes according to the 7th All India School Education Survey (7th AISES), 2007, conducted by the National Council of Educational Research and Training (NCERT), New Delhi. This has been possible due to the governmental efforts to provide quality education and in schooling facilities to all children in the age group of 6–14 years.

In 1987, Government of India launched a scheme known as 'Operation Blackboard' to provide certain minimum facilities in schools. These included (a) at least two teachers in all primary schools; (b) essential teaching learning material in every school; and (c) at least a two roomed all weather building for each school (Department of Education, 2008). Another scheme, 'District Primary Education Programme (DPEP)', was launched as a centrally sponsored scheme in 1994 in educationally backward districts of 18 states of the country to provide access to all children to primary education, to reduce dropout rates and to raise the average achievement level (IGNOU, 2003).

Government of India launched another scheme Sarva Shiksha Abhiyan (SSA) in 2001-02 to attain universal elementary education covering the entire country in a mission mode with a focus on quality.

---

\* *Professors*, Department of Educational Measurement and Evaluation, National Council of Educational Research and Training (NCERT), New Delhi, India

The Government of India took initiative to build schools in rural habitats as 70 per cent of Indian population lives in rural areas. As a consequence, today 78 per cent of the rural population have primary schools within habitations (148 thousand habitations) and 94 per cent of the rural population have primary schools within a walking distance of 1km (7th AISES). As a result of the government initiatives, today 93 per cent of primary schools have a brick building, 80 per cent schools have drinking water facility, 47 per cent have urinals and 40 per cent have toilets (7th AISES).

It is evident that there is a phenomenal improvement in the access to primary education but there is need to ensure quality and equip the schools with adequate resources. A number of studies have shown that achievement level of students is highly correlated with facilities available in schools. The study "Factors Influencing Effectiveness of Secondary Schools of Delhi" found the physical facilities to be the most important factor for effectiveness of a school as availability of good facilities provides a conducive environment for learning. (Agrawal et. al, 2004). The baseline achievement survey conducted on Class V students by the NCERT also indicated that teaching aids, physical and ancillary facilities were positively correlated with learning achievement (NCERT, 2006). In a study conducted in Namibia, the condition of school building was found to have a high correlation with school achievement. (Makuwa, D, 2005). Thus, physical facilities and other resources play an important role in ensuring the quality of education. Equipping the primary schools with adequate facilities still remains a challenge for India.

The study, World Education Indicators-Survey of Primary Schools, conducted by UNESCO Institute of Statistics (UIS) in collaboration with Organisation for Economic Cooperation and Development (OECD) in 11 different countries looked at how primary education was provided in different national settings. For this data was collected on different variables from each participating country. For India resources in schools is an important issue. Hence, this paper explores the availability of different resources and the condition for school buildings in Indian Schools.

**Questions to be explored in this paper**

- (a) How do Indian primary schools compared to schools in other countries in terms of resource levels?
- (b) Within India, how schools compare in resource levels by schools location, school type (management) and states.

- (i) Rural, Urban
- (ii) Public, Government aided, Independent private schools
- (iii) Assam, Rajasthan, MP and Tamil Nadu

### Development of Tools

The study of world education indicators required data on how schools function, how teacher teach, the learning conditions pupils and teachers face and the support available for change both from the system and from the communities they serve Accordingly, the OECD and UIS staff along with international experts developed three questionnaires:

- School questionnaire to be filled up by the school heads
- Teacher questionnaire to be filled up by Grade IV teachers

Questionnaire on the 'Opportunity to Learn' that Grade IV pupils had to learn reading and mathematics.

It was through question numbers 18 and 20 of the School Questionnaire that information was collected on the availability of shortage of different items related to school resources and conditions of school buildings respectively.

### Sample

The WEI-SPS study employed a stratified systematic sample design. India's sampling design followed a two stage procedure which first involved the selection of districts in participating states followed by the selection of schools from the list of eligible schools. The schools were selected with equal probability using a systematic sampling technique. In each selected school, all teachers teaching language and/or mathematics to grade IV students were included in the teacher sample.

The sample for India in the WEI study covered only four states- Assam, M.P., Rajasthan and Tamil Nadu. These states represented the Eastern, Central, North Western and Southern regions of the country. Altogether 1105 schools from 65 districts were covered in the study. The following table shows the state-wise sample of districts and schools.

**TABLE 1**  
**Sample of Districts and Schools in Four States of India**

<i>State</i>	<i>Number of Districts</i>	<i>Number of Schools</i>
Assam	14	279
Madhya Pradesh	20	279
Rajasthan	16	275
Tamil Nadu	15	272
<b>Total</b>	<b>65</b>	<b>1105</b>

In each state, schools were sampled location wise i.e., rural and urban and also according to the type of schools i.e. government/public schools, Government dependent private schools and independent private schools. The following two tables show the number and percentage of pupils by school location and school type in each state.

**TABLE 2**  
**Percentage of Pupils by school location in four states of India**

		Location		Total
		Rural	Urban	
Assam	Count	3267336	233709	3501045
	Percentage	93.3%	6.7%	100.0%
MP	Count	6481780	2656178	9137958
	Percentage	70.9%	29.1%	100.0%
Rajasthan	Count	6289977	1695191	7985168
	Percentage	78.8%	21.2%	100.0%
Tamil Nadu	Count	3091296	3763504	6854800
	Percentage	45.1%	54.9%	100.0%
<b>Total</b>	Count	19130389	8348582	27478971
	Percentage	69.6%	30.4%	100.0%

**TABLE 3**  
**Percentage of Pupils by school type in four states of India**

		Types of School			Total
		Public School	Govt. Dependent Private School	Independent Private School	
Assam	Count	2715006	675892	57620	3448518
	Percentage	78.7%	19.6%	1.7%	100.0%
MP	Count	6496448	444329	2187576	9128353
	Percentage	71.2%	4.9%	24.0%	100.0%
Rajasthan	Count	5415726	92411	2461321	7969458
	Percentage	68.0%	1.2%	30.9%	100.0%
Tamil Nadu	Count	3346426	1848304	1617917	6812647
	Percentage	49.1%	27.1%	23.7%	100.0%
<b>Total</b>	Count	17973606	3060936	6324434	27358976
	Percentage	65.7%	11.2%	23.1%	100.0%

The tables indicate that about 70 per cent pupils were in valley schools and 30 per cent were in urban schools. Among these 68 per cent studied in public schools, 11 per cent in govt. dependent private schools and 23 per cent in independent private schools.

## Results

### What was the condition of school buildings

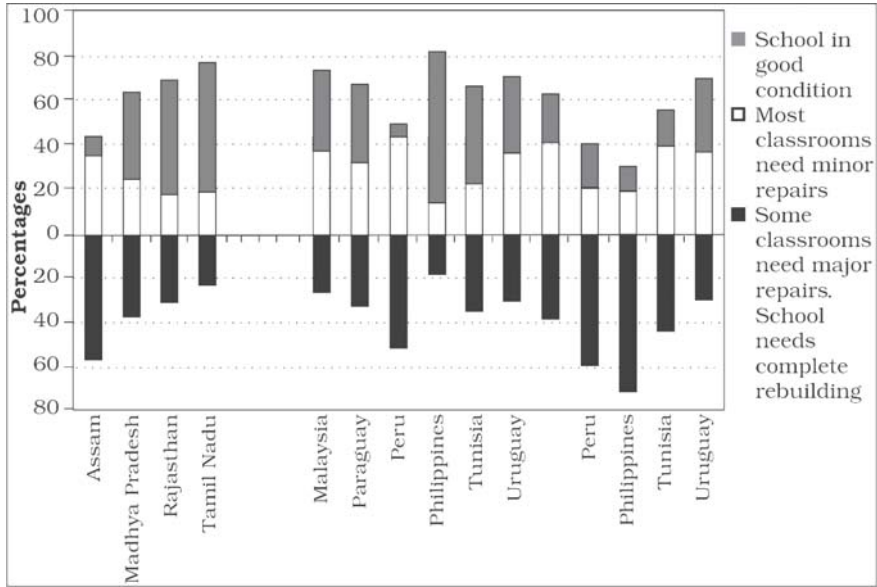
In the WEI study questions were asked from the school heads about their perception of the condition of school buildings. This is an

important variable and correlates positively as shown by earlier stated studies, with the school outcomes. The school heads classified their schools as

1. School needs complete rebuilding
2. Some classrooms need major repairs
3. Most classrooms need minor repairs
4. School is in good condition

The first two categories were collapsed into one category (poor condition) and the next two also in one category (good condition). The following figure shows the percentage of primary pupils in schools in the states of India and in other countries by condition of school buildings.

**FIGURE 1**  
**The Percentage of Primary Pupils in Schools in the States of India and in other Countries by Condition of School Buildings**



As can be seen from figure 1, in India more than 60 per cent of pupils were in schools where the heads seemed to be satisfied that condition of their school buildings was good. About 40 per cent of the pupils were in schools whose condition was deemed as poor. This compared closely with Malaysia and Argentina.

Among the states, it was seen that large number of pupils in the state of Assam were in schools that needed major repairs or complete rebuilding. As opposed to this about 78 per cent students in the state of Tamil Nadu were in schools which were in good condition. The schools in Tamil Nadu compare well with the schools in Chile, Argentina and Malaysia.

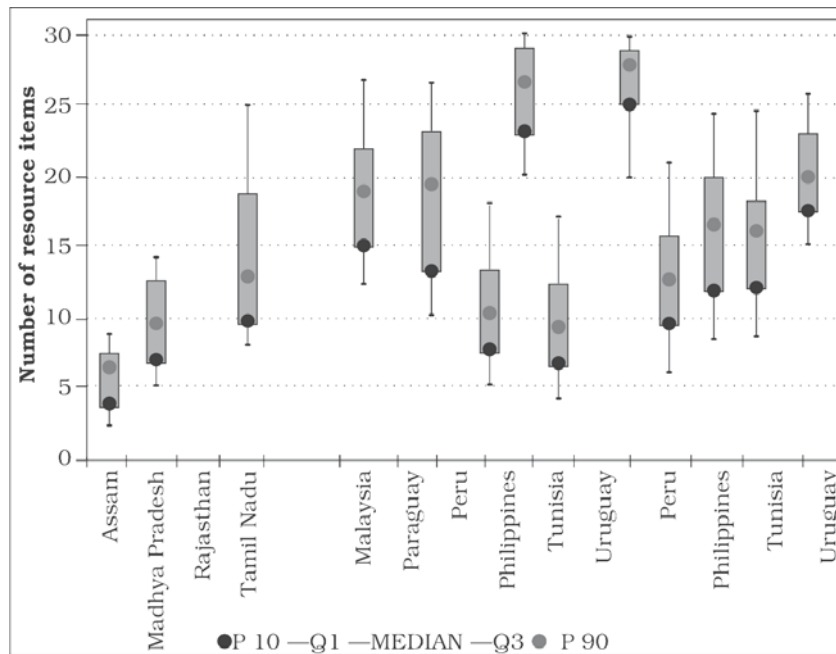
**Availability of School Resources**

In the school questionnaire, a list of 31 items representing different resources was given and the school heads were asked if they had each one of them in their schools. The list contained such basic items as electricity, water, toilets to computers and internet.

**Number of Resource Item: Four Indian States in the International Context**

The following figure shows the distribution of pupils population by the number of resource items.

**FIGURE 2**  
**Distribution of Pupils Population by the Number of Resource Items**



About 50 per cent primary school pupils in India were in schools with 9 or less than 9 items, 25 per cent pupils had 6 less than 6 items and 25 per cent were in schools with 13 or more than 13 items. In the international context, it can be seen that the Indian schools were most poorly resourced. The best situation was in Chile and Malaysia. A large variation was seen across the four states. Schools in Assam were relatively poorly resourced and the schools in Tamil Nadu were relatively better resourced, comparable to Philippines.

In Indian schools, some resource items were the basic items which were available to large percentage of primary pupils (above 60 per cent pupils). These basic items as can be seen from the table 4 are blackboard, maps, drinking water, first aid kit, school library and sports field. In addition to these 6 items, some primary school children have a facility of any one of the three or more resource items which may be separate toilets for boys and girls, electricity, staff room, sitting places and writing places.

The rest of the items are luxury for Indian schools. Electricity was not available to 63 per cent primary pupils. In India, urban schools have electricity connections, whereas in rural areas it is still a distant dream.

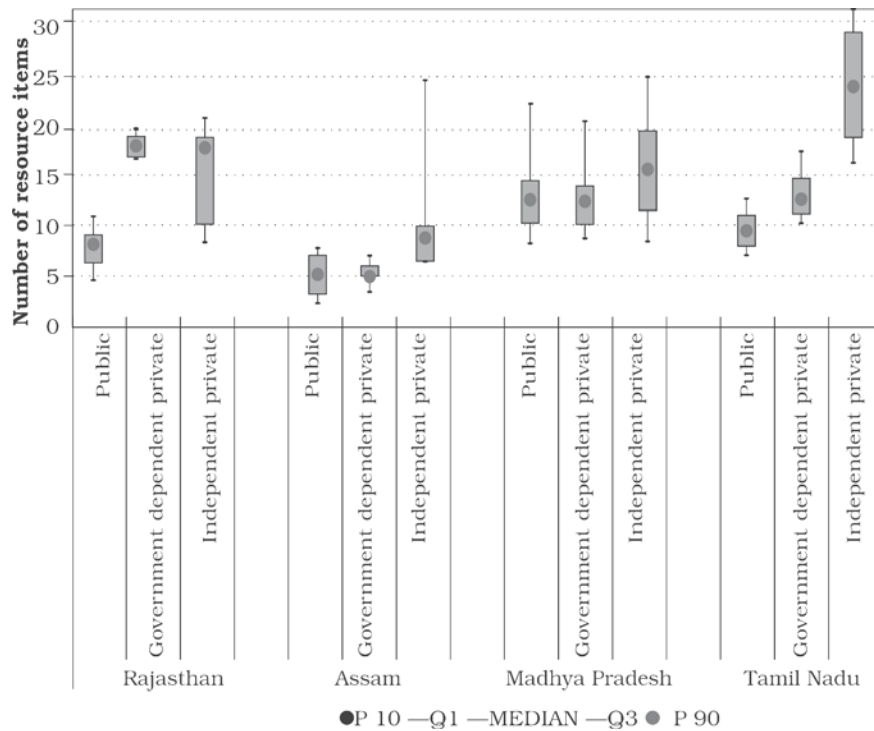
Almost 60 per cent students neither have sufficient space for writing nor sufficient places for sitting. Situation was particularly bad regarding safety equipment. Special rooms for teaching like audio visual room and science laboratory, are rare in Indian primary schools. Basic equipment like radio, tape recorder, T.V., overhead projector, microscope etc., are also not available to most primary schools and computers for students' use are very rare.

### **Resource Items by School Type**

The percentage of pupils in schools possessing different resource items have been presented in Figure 3 for different types of schools i.e. public/government, Government dependent private and independent private schools in different states of India.

Fifty per cent primary pupils in public schools in different states were in schools with 4 to 9 resource items, whereas 50 per cent primary pupils in independent private schools were in schools with 9 items (Assam) to 23 items (Tamil Nadu). The state of Assam has the most poorly resourced schools. The reasons may be several. It has hilly terrain and rivers like Brahmaputra which flood and create devastation every year on a large scale.

**FIGURE 3**  
**Distribution of Primary Pupils for all Resource Items by School Type**



**Resource Items by School Location**

For each state of India, the schools were compared by their location. The figure below shows the percentage of pupils possessing different resources items in village schools and urban schools.

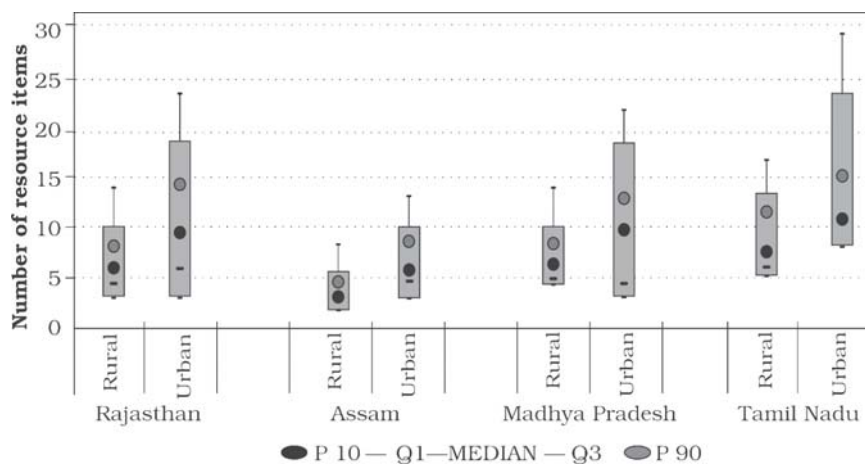
It could be seen that town schools were better equipped than the village schools in all the states of India. Schools in Assam were again found to be poorly resourced. Both village and town schools in Tamil Nadu were better resourced than schools in any other state.

The study of resources in primary schools of India showed interesting results. About 70 per cent primary pupils were in rural schools. Only 65 per cent pupils were in public schools, 11 per cent in Government dependent private schools and 23 per cent were in independent private schools. More than 50 per cent students in



Assam were in schools with buildings in poor condition. More than 50 per cent of pupils were in schools that did not have electricity, sufficient writing places and sufficient sitting places. More than 60 per cent pupils did not have the facility of radio, telephone, T.V., tape recorder, overhead projector etc. Computers are not available in primary schools of India.

**FIGURE 4**  
**Distribution of Primary Pupils for all Resource Items by School Location**



**Variation in Schools Resources in Indian States**

To see whether there is variation in school resources among the four Indian states and within the state at district level, analysis of variance was computed. The results are given in the following tables.

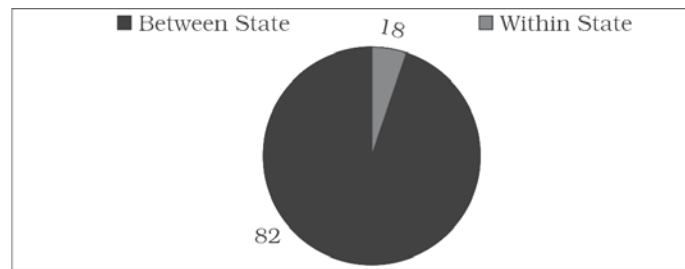
**TABLE 5**  
**Analysis of Variance for Resources between States**

Sources of Variation	Sum of Squares	df	Mean Square	F
Between Groups	187512686	3	62504228.7	2049618.2
Within Groups	837986091.5	27478966	30.4955467	
<b>Total</b>	<b>1025498778</b>	<b>27478969</b>		

**FIGURE 5**

**Variation of Resources between States**

Between states 18  
 Within states 82



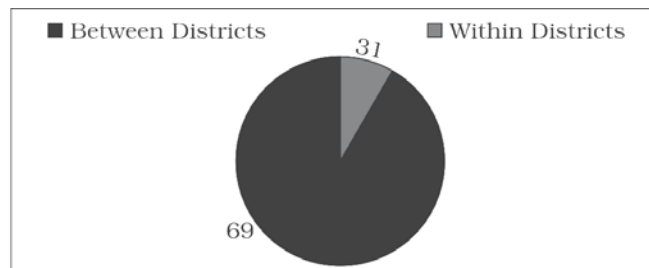
**TABLE 6**

**Analysis of Variance for Resources between Districts**

		<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Assam	Between Groups	6430762.58	13	494674.04	79123.67	0
	Within Groups	21888122.5	3501030	6.2519094		
	<b>Total</b>	28318885.1	3501043			
MP	Between Groups	25462947.2	19	1340155.1	51467.01	0
	Withing Groups	237943792	9137938	26.039112		
	<b>Total</b>	263406739	9137957			
Rajasthan	Between Groups	28941224.7	15	1929415	79997.53	0
	Withing Groups	192589350	7985152	24.118433		
	<b>Total</b>	221530575	7985167			
Tamil Nadu	Between Groups	70133144.3	14	5009510.3	134876.5	0
	Within Groups	254596748	6854784	37.141469		
	<b>Total</b>	324729892	6854798			

**FIGURE 6**

**Variation of Resources between States**



It can be seen from the table 5 that there is a variation in school resources from state to state. This may be explained by the fact that education in India is a state subject and each state makes its own policy and allots funds for different levels of education.

The table 6 indicates that there is also variation between districts within each state. This is due to implementation of policies by district level functionaries and the utilisation of funds by them.

**School Resources and other Dimesions of School Education**

Effective schooling not only depends on school resources but also on other factors too like emphasis on academic achievement, professional satisfaction of teachers, perceived teachers' status, staff's vision of school objectives, teachers' level of education and student motivation. When total school resources were correlated with these variables, the following results were seen.

**TABLE 7**  
**Correlation between Total Resources and Selected Variables in India**

<i>Item</i>	<i>Correlation</i>	<i>SE</i>
Emphasis on academic achievement	0.239	0.049
Index of teacher complaints	-0.202	0.039
Professional satisfaction	0.300	0.042
Perceived teacher status	0.138	0.039
Per cent students repeating a grade	-0.076	0.037
Staff's vision of school objectives	0.247	0.036
Teacher's level of education	0.171	0.038
Perceived students motivation	0.205	0.041
School engagement	0.173	0.048
Student behaviour problems	0.206	0.070

The Table 7 indicates that total number of school resources are highly correlated with different dimensions of education. It has been observed that higher the total resources, higher the emphasis on achievement, professional satisfaction of teachers, perceived teacher status, staff's vision of school objectives, teachers' level of education, perceived students' motivation. The schools which are better resourced have lesser problems like repetition of grades by students and teachers' complaints of students behaviours. On the other side poorly equipped schools have low emphasis on achievement, poor students motivation, lesser satisfaction level of teachers and more complaints of behaviour problems.

### **Implications of the Study**

The findings of the study have significant implications for improving the school resources in Indian primary school and can be used to sensitise policy makers and planners about importance of resources in the schools. Administrators and policy makers should try to plan and provide better physical facilities and resource in primary schools of the country. A minimum level of a facilities should be provided to each government and government aided school. There should include

- Complete classroom with usable black boards, chalks, single or dual desks and chairs/benches for students.
- electricity and water.
- sufficient number of clean toilets for students and staff.
- Computer facilities for students.
- Well equipped school libraries.
- Audio-visual room equipped with radio, tape recorder, T.V., overhead projector etc. If our schools are better resourced like the schools in Malaysia, we can look forward to higher level of learning outcomes.

**Acknowledgment:** We gratefully acknowledge the help provided by Dr. Yanhong Zhang of UIS in analysing the WEI data for India.

### **REFERENCES**

- AGRAWAL, M., JAIN, V. K. and CHANDRASEKHAR. 2004. Factors influencing Effectiveness of the Secondary Schools of Delhi, NCERT, New Delhi (Xeroxed)
- Department of Education, Programmes. [www.education.nic.in/ed50years/g/S/HS/OSHSO501.htm](http://www.education.nic.in/ed50years/g/S/HS/OSHSO501.htm), 28.2.2000
- District Primary Education Programme, India, IGNOU, 2003, New Delhi
- MAKUWA, D. 2005. The SACMEQ II Project in Namibia: A study of the conditions of schooling and the quality of education, Ministry of Education, Namibia.
- NCERT. 2006. Learning Achievement of Class V students, a Baseline study, NCERT. 2006. New Delhi
- Seventh All India School Education Survey, New Delhi
- A View Inside Primary Schools of India, World Education Indicators-Survey of Primary Schools, India Report. Xeroxed
- World Education Indicators- Survey of Primary Schools UIS. 2008.