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Qualitative Assessment of Primary Education in Punjab

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Abstract

In the wake of globalization, emergent national policy environment has changed the texture of economic space for all the states in India. Likewise, Punjab too experienced the proliferation of higher educational institutions. A manifold increase has been observed in the number of students in these institutions but rural students are not visible there. Field visits and literature pointing to the poor standard of rural schools provided the reason for conducting the present study with the objective of assessment of quality of rural education at the school level. The study was conducted in ten villages, randomly selected from five regions of Punjab. The major findings of the study were that educational infrastructure in Punjab is quite satisfactory; in some villages it compares even better than the best in the urban areas. As against the sanctioned strength of the teachers only 70 per cent are on the rolls and even 30 per cent of them were absent on the day of the school visit.. The proficiency of the rural children is very low, particularly in math and science for which 54 per cent and 39 per cent children respectively answered either none or only one out of 5 questions correctly. Not only the level of the government school education but also that of the private schools is far from satisfactory. There is an urgent need to improve the budgetary allocation, recruiting / filling all the teaching posts and improving the functional performance through quality and effective monitoring and evaluation mechanisms at all levels.

Introduction

In the developing countries like India, the largest resource that it can command at any given time is man power. Moreover, the adults who have higher level of education attainment have more and better paid employment, higher individual earnings and higher social standing than those who have lower

educational attainment. Right from the outset of independence, planners and policy makers in India have looked upon education as one of the principal instrument of development. The extent and the depth of their faith in education may be gauged in the national constitution which promised free and compulsory education to all children up to the age of fourteen. To fulfill this objective the government established a vast network of primary and secondary schools in all the states of the country. Literacy rates have increased significantly from 18.33 percent in 1961 to 74 percent in 2011 at the national level and from 28.31 percent in 1961 to 77 percent in 2011 in Punjab (Census 2011). In the same way higher education sector also expanded significantly particularly in the last two decades. The emergence of liberal economic policy in nineties brought about observable changes in the sphere of higher education in the form of entrance of private sector in education. Like other states of the country, Punjab too experienced the proliferation of higher educational institutions. Today there are eleven universities including two deemed universities and 524 professional colleges affiliated to these universities in the Punjab state as compared to 1991, when there were only four Universities and 199 professional colleges (Brar and Kalia 2009). The number of students in these institutions has increased from 1.55 percent in 1991 to 11.39 percent in 2007. Today, 318301 students are enrolled in higher education. Unfortunately, rural students are not visible in these institutions. The percentage of rural population in the state is 66 percent where as the share of rural students in the four main universities and professional institutes in the state is only 3.71 percent (Ghuman et al 2009). Out of the total rural students only 7.25 percent are above school level, from which only 3 percent are postgraduates (Singh et al 2011). It indicates a clear cut exclusion of rural students in higher education in the state. It is very disconcerted that in spite of a vast network of government schools, availability of higher educational institutes as well as a well developed transportation system, higher education is a glass ceiling for majority of the rural youth. Field visits and literature (Reddy 2001; Dhaliwal 2003; Sidhu 2005 and ASER 2010) pointed out that the reason for this dismal condition is poor standard of rural schools. It provided enough reason for conducting a comprehensive study in rural schools with the specific objective of assessing quality of

ducation in rural schools.

Data-base & Methodology

The study is a part of census study on *Status of Rural Education-2010* conducted in 50 villages by a team from Punjab Agricultural University Ludhiana for Punjab State Farmers Commission (Singh *et Opkal* 2011) This part of the study has been conducted particularly in rural schools of the selected villages. The state was divided into five regions namely Kandi, Doaba, Mjha, Malwa Central and Malwa West, representing different socio-economic and cultural milieu. From each region two villages were randomly selected. Hence the study was conducted in all the schools of ten selected villages. There were 24 schools in these villages, of which seventeen were government and seven were private ones.

There is no consensus among educationists as to what constitutes quality in education at least at the primary level. Many researchers tend to equate school quality with school effectiveness and bring learners' achievement to the centre stage as the bases for assessing school quality. Others believe that achievement of individual and institutional excellence by themselves need not necessarily signify quality improvement in the system because notion of quality has deep social and cultural roots. However, it is generally agreed that in developing countries, simple inputs especially directly related to the institutional process are consistently associated with higher achievements and thereby improve the quality. Keeping this in mind, two variables for input i.e. *school infrastructure* and *teaching* and one variable for output i.e *performance of students* were selected to assess the quality of education. Information regarding infrastructure and teaching was collected on structured interview schedule while student performance was evaluated by conducting a written examination of the sample of students randomly taken from the Std VI of the Middle and above schools on the day of the visit. The questions were mainly from the Std V text books recommended by Punjab School Education Board. The question paper including questions from science, mathematics and general knowledge was prepared by consulting three teachers of Government elementary schools. In total 321 students were

examined of whom 147 were from the Government schools and 174 from the Private schools.

Empirical Findings

The school infrastructure

Adequate physical facilities in the schools have positive effect on the quality of education. Of the 10 government primary schools, 3 did not have separate class rooms for different classes. All had electricity and all had toilet and drinking water facility though separate toilet facility for girls was not available in 21 per cent of schools. However, the playgrounds were adequate only in 23 per cent schools. One or two schools had even the boundary wall broken. But by and large the rural schools infrastructure in Punjab is satisfactory and some had even the excellent one comparable to any good school in the urban areas (Table 1).

Teachers and Teaching aids:

Table 1

The school infrastructure, Punjab, 2010-11

	Government (17)	Private (7)
Class rooms	3 primary schools had no separate class rooms for different classes	
% rooms with furniture	100	93
% schools with adequate playgrounds	23	100
% schools with electricity	100	100
% rooms with blackboard	96	100
% schools with electric fans	89	100
% schools with toilet	100	100
% schools with separate toilet for girls	79	100
% schools with drinking water facility	100	100

Teaching is an important factor in determining the quality of education in schools. An optimum teacher-pupil ratio i.e. 25 is must for the proper learning of students. There were 113 sanctioned posts of teachers in all the government schools of whom 73 per cent were on the rolls. However, the disquieting feature is that on the day of the visit, only 62 per cent of the teacher's strength on rolls was present and another 6 per cent were on leave or on duty elsewhere and the remaining 32 per cent were absent. One Government Middle school had only one regular teacher. Among the private schools there were 102 sanctioned posts and all of them were on the rolls and 98 were present on the day of the visit, the remaining 4 were on leave (Table 2).

Table 2

Teachers and teaching aids

	Government schools		Private schools	
A. Information about teachers				
	No.	%	No.	%
Sanctioned	113		102	
On rolls	82	72.6	102	100
Present	51	62.2	98	96.1
On leave / duty elsewhere	5	6.1	4	3.9
Absent	25	31.7	0	
1. One private senior secondary school did not have the science teacher				
2. One government middle school had only one regular teacher				
B. Audio-visual aids				
Black board		94 %		100 %
Charts		100 %		86 %
Posters		79 %		71 %
Models		68 %		71 %
Computers	Primary	=0/10	Primary	=0/1
	Middle	=1/1	Middle	=0/1
	Matric	=3/3	Matric	=3/3
	Senior secondary	=1/1	Senior secondary	=1/2
Projector		None	Senior secondary	=1/2

So far as teaching aids are concerned, all but one government school had the blackboard. Hundred per cent schools had the charts displayed, 79 per cent had the posters and 68 per cent had the models. The 2 Senior Secondary schools, 3 High schools and 1 Middle school also had the computer, though as per the teachers' versions, their use was too minimal.

Students and their performance:

There were 2473 number of students enrolled in the government schools of whom 1667 were present on the day of the visit to the school, i.e. 67.4 per cent. The attendance in the private school was 72.4 per cent, i.e. 1769 students present out of the 2443 total on the rolls. However, the range of presence was 28 to 96 per cent in the government schools. 3 government schools (19%) had less than 50 per cent students present of whom 2 had even less than 33 per cent presence on the day of the school visit. 7 government schools (41 %) had the students' presence of above 90 per cent (Table 6.8).

Table 3

Information about students

(Number / %)

	Government schools	Private schools	Total
Total Students Enrolled	2473	2443	4916
Present on the day of visit	1667	1769	3436
% present	67.4	72.4 %	69.9 %
Range of % present	28 to 96%		
Note 1: One private school provided too little information for analysis			
Note 2: One government school also provided limited information			

roficiency of Studies:

The subject wise performance of the students follows:

Science:

Science is the most important subject. Of the 5 questions asked, 13 per cent of the students did not answer correctly to any question. Only 18 per cent students answered all the questions. About 53 per cent students scored more than 60 per cent marks. The performance of the private schools was no better. The overall average score (out of 5) of the government and the private school students was 3.18 and 2.28 respectively; the overall average for all the students was 2.69, i.e. 54 per cent only (Table 4).

Table 4

Proficiency of rural school students in science, 2010-11

	Number of students			Percentage		
Science Score	Govt. School	Private School	Total	Govt. School	Private School	Total
0	24	16	42	16.3	9.2	13.1
1	16	35	50	10.9	20.1	15.6
2	5	56	60	3.4	32.2	18.7
3	12	32	44	8.2	18.4	13.7
4	44	22	66	29.9	12.6	20.6
5	46	13	59	31.3	7.5	18.4
Total	147	174	321	100	100	100
Average score	3.18	2.28	2.69			

Mathematics:

It is an even more important subject for brightening the future all-round prospects of the students but the performance here was even worse. More than half the students (58%) answered correctly none or hardly one question out of 5; about 17 per cent had even zero mark. And only 25 per cent students

had more than 60 per cent marks. Compared with science, where 18.4 per cent students answered all the questions correctly, only 8.7 per cent answered all the math questions correctly. Again, the performance of the students from the private schools was poorer than the government school students, with overall average score being 1.27 and 2.28 respectively. The overall average score of all the students in mathematics was also poorer than in case of science, being 1.73 and 2.69 respectively (Table 5).

Table 5

Proficiency of rural school students in mathematics, 2010-11

	Number of students			Percentage		
Mathematics Score	Govt. School	Private School	Total	Govt. School	Private School	Total
0	17	37	54	11.6	21.3	16.8
1	48	86	134	32.7	49.4	41.7
2	22	31	53	15.0	17.8	16.5
3	20	12	32	13.6	6.9	10.0
4	17	3	20	11.6	1.7	6.2
5	23	5	28	15.6	2.9	8.7
Total	147	174	321	100	100	100
Average score	2.28	1.27	1.73			

In case of mathematics the knowledge is better built up successively. It is therefore important to probe the analysis from different perspectives of not correctly answering the higher level of proficiency question. The evaluation showed that there was a poor built up to successive level of mathematics. In fact, for the very first level of question, i.e. the simple addition and subtraction, as many as 78 per cent students did not answer it correctly. In case of the next level of addition and multiplication, 70 per cent of the students did not answer it correctly. Again, 72 per cent did not answer the addition and division correctly. The next level of multiplication and division was answered correctly by 19 per cent students only. However, majority of

the students (77%) could write correctly the large number in words.

Viewed from a different angle, as against 78 per cent wrongly answering simple addition and subtraction (Q1), another 9 per cent, making it to 87 per cent could not answer correctly to further question of multiplication (Q2) although otherwise as many as 30 per cent students answered Q2 correctly. Amongst those students who answered the first question correctly, only 39 per cent answered the second question correctly.

Likewise, successively making to the next question of addition and division, amongst the students whose answers to the first two questions were correct, only 16 per cent answered this question correctly. And again, of the students answering the first three questions correctly, only 19 per cent answered the combination of multiplication and division correctly. Finally, there were only 8 per cent students whose answers to all the above 4 questions were correct but not that of the last question, viz. writing the large number in vernacular form, which was rather otherwise answered correctly by most of the students. The difference between the government and the private schools was only nominal. The percentage of the blank students at the very first question (addition and subtraction) was higher among the private school students, though the successive built up in their case was better amongst the remaining students (Table 6).

It is also important to examine the correlate between science and math in respect of the rural children. The math starts earlier, and it is the proficiency in math which leads the proficiency in other subjects. There were 132 students (41 %) who scored 1 mark in math but as many as 81 of them scored 2 or more marks in science. Of almost all the students who scored 5 marks in math (26), most of them (23) also scored 5 marks in science, though the total number of students who scored 5 marks in science were 59 (Table 7). 65 students scored 4 marks in science but only 6 of them had 4 or more marks in math. It is thus more important to improve the proficiency in math at the elementary level.

Table 6

Proficiency of rural students at different levels of mathematics, Punjab, 2010-11

Level of proficiency in mathematics	Response	Number			Per cent		
		Govt	Pvt	Tota l	Govt	Pvt	Tota l
Q 1. Addition and subtraction	Not correct	99	152	251	67.3	87.4	78.2
Q 2. Addition and multiplication	Not correct	76	147	223	51.7	84.5	69.5
Q 3. Addition and division	Not correct	86	144	230	58.5	82.8	71.7
Q 4. Multiplication and division	Not correct	106	155	261	72.1	89.1	81.3
Q 5. Writing large number in words	Not correct	33	42	75	22.4	24.1	23.4
At least one of the above	Correct	130	137	267	88.4	78.7	83.2
All the 5 questions	Correct	21	5	26	14.3	2.9	8.1

	Response						
	Number			Per cent*			Cumul a-tive %
	Govt	Pvt	Total	Govt	Pvt	Total	
Q 1 is not correct	99	152	251	67.3	87.4	78.2	78.2
Q1 is correct but not Q 2	17	10	27	35.4	45.5	38.6	86.6
Q1 & Q2 are correct but not Q 3	2	5	7	6.5	41.7	16.3	88.8
Q1, Q2 & Q3 are correct but not Q 4	5	2	7	17.2	28.6	19.4	91.0
Q1, Q2, Q3 & Q4 are correct but not Q 5	3	0	3	12.5	0.0	10.3	91.9
All the 5 questions are correct	21	5	26	14.3	2.9	8.1	100.0
Total	147	174	321	100. 0	100. 0	100. 0	

* These %ages are the successive built-up; 99 as % of 147; 17 as % of the remaining 48 (147- 99); 2 as % of 31 (147-97-17) and so on.

The cumulative %ages are of the total up to the question to the grand total, i.e. 251 as % of 321; 278 (251+27) as % of 321; and so on.

General knowledge:

There were 5 questions about general knowledge also and the performance in this case was better than in case of science and mathematics. The overall average score of the students in case of general knowledge was 3.74 as compared with 2.67 in case of science and 1.97 in case of mathematics.

Table-7

Comparative proficiency in math and science

Marks in Math	Marks in Science						
	0	1	2	3	4	5	Total
0	19	12	14	5	4		54
1	22	29	24	29	24	4	132
2	2	8	17	5	20	3	55
3		1	3	5	11	12	32
4			1		4	17	22
5			1		2	23	26
Total	43	50	60	44	65	59	321
			Percentages				
0	5.9	3.7	4.4	1.6	1.2		16.8
1	6.9	9.0	7.5	9.0	7.5	1.2	41.1
2	0.6	2.5	5.3	1.6	6.2	0.9	17.1
3		0.3	0.9	1.6	3.4	3.7	10.0
4			0.3		1.2	5.3	6.9
5			0.3		0.6	7.2	8.1
Total	13.4	15.6	18.7	13.7	20.2	18.4	100.0

About 63 per cent students had scored 4 or higher in general knowledge as compared with 39 per cent and 15 per cent in case of science and mathematics respectively. Again, the performance of private school students was poorer, their average score being 2.50 as compared with 4.07 of the government schools' students (Table 8).

Reading, writing and legibility:

The legibility and correctness of writing do influence the achievement in more ways than one. The legibility was ranked from 1 to 3 for poor, average and good respectively. The correctness of writing was ranked, according to the percentage of the total words written correctly. The ranks were from 1 to 5 awarded successively as for very poor (less than 10%), poor (10 to 33%), average (33 to 50%), good (50 to 70%) and very good (more than 70%). The reading and letter recognition were somewhat difficult to assess

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Table-8

Proficiency of the rural school students in general knowledge, 2010-11

General Knowledge Score	Number of students			Percentage		
	Govt. School	Private School	Total	Govt. School	Private School	Total
0	4	10	14	2.7	5.7	4.4
1	7	14	21	4.8	8.0	6.5
2	6	32	38	4.1	18.4	11.8
3	19	27	46	12.9	15.5	14.3
4	32	52	84	21.8	29.9	26.2
5	79	39	118	53.7	22.4	36.8
Total	147	174	321	100	100	100
Average score	4.07	2.50	3.74			

in the short time interviewing each student individually. Alternatively, the students were then asked to write the six alphabets in the question in the full form but it again turned out to be difficult to have been comprehended by the school students, as seen from their responses; many students did not write even one alphabet in the vernacular form as a word, though they had written these alphabets while answering other questions. There were 55 per cent students in this category who did not write at all. However, the scores were still awarded to assess as to how many students could do so for at least some alphabets and there were 27 per cent students who had written all the alphabets in the vernacular form correctly and another 11 per cent had written 5 out of 6 alphabets in the vernacular form correctly (Table9).

As many as 79 per cent students had average or good writing legibility but only 22 per cent had a good hand-writing (Table 10). The correctness of writing showed that 7 per cent students had written less than 10 per cent of the written words correctly. Another 20 per cent wrote 10-30 per cent words correctly. The average score of 30-50 per cent writing the correct words was

Table-9

Proficiency of the rural school students in writing the alphabets in full word (vernacular) form as a proxy for the reading ability, 2010-11.

	Number of students			Percentage		
Letter Recognition Score	Govt. School	Private School	Total	Govt. School	Private School	Total
0	114	61	175	77.6	35.1	54.5
1	0	2	2	0.0	1.1	0.6
2	0	1	1	0.0	0.6	0.3
3	2	3	5	1.4	1.7	1.6
4	3	13	16	2.0	7.5	5.0
5	13	22	35	8.8	12.6	10.9
6	15	72	87	10.2	41.4	27.1
Total	147	174	321	100.0	100.0	100.0
Average score	1.18	3.49	2.44			

Table-10

Proficiency of the rural school students in writing the alphabets in full word (vernacular) form as a proxy for the reading ability, 2010-11

	Number of students			Percentage		
Legibility Score	Govt. School	Private School	Total	Govt. School	Private School	Total
Poor =1	29	38	67	19.7	21.8	20.9
Average =2	89	95	184	60.5	54.6	57.3
Good =3	29	41	70	19.7	23.6	21.8
Total	147	174	321	100	100	100
Average score	2.00	2.02	2.01			

achieved by another 23 per cent students. Thus about 51 per cent students had written more than 50 per cent words correctly, and 28 per cent students had written more than 70 per cent words correctly (Table 11).

Table-11

Proficiency of the rural school students in correctness of writing, 2010-11

Legibility Score	% of words written Correctly	Number of students			Percentage		
		Govt. School	Private School	Total School	Govt.	Private	Total
Very poor =1	< 10	4	17	21	2.7	9.8	6.5
Poor =2	10-30	21	42	63	14.3	24.1	19.6
Average =3	30-50	30	44	74	20.4	25.3	23.1
Good =4	50-70	33	40	73	22.4	23.0	22.7
Very Good=5	Above 70	59	31	90	40.1	17.8	28.0
Total		147	174	321	100	100	100
Average score		3.83	3.15	3.46			

Overall Performance:

It is important to gauge the overall performance of the rural students. There were only 1.2 per cent students who secured 100 per cent marks; they answered all the questions correctly. And excluding the confusing question of writing the given alphabets in the vernacular form as a proxy for reading / recognition, it was still only 3.4 per cent of the students who scored full marks. 7.5 per cent students answered all the science, mathematics and general knowledge questions correctly. The top level students, who scored more than 80 per cent marks, were also only 6 per cent when all questions were considered but excluding the one as stated above, there were 19 per cent students in the rural schools who could be considered as brilliant when they have reached Std VI. The students who secured first division (60 % or above marks) were 46 per cent with alphabet question excluded. 46 per cent students also scored first division in science, math and general knowledge questions collectively. These are not small percentages at this level, though not very encouraging too, but then fewer of them finding admissions to /going for higher level of education when they pass out from the school level throws a clue that the learning environment of the rural students not only at the

Table-12

Overall performance of rural students, Punjab, 2010-11

Performance parameter	Performance criterion		Government schools		Private schools		Total	
	Score	%	No.	%	No.	%	No.	%
Answered all questions correctly	29/29	100	4	2.7	0	0.0	4	1.2
Reading/recognition excluded, answered all questions correctly	23/23	100	10	6.8	1	0.6	11	3.4
Top level students scoring 80% or above	>24/29	> 80	19	12.9	1	0.6	20	6.2
	>19/23	> 80	54	36.7	7	4.0	61	19.0
Students securing First division	18/29	>60	67	45.6	52	29.9	119	37.1
	14/23	>60	97	66.0	50	28.7	147	45.8
Answered all the science & math questions correctly	10/10	100	21	14.3	4	2.3	25	7.8
60 % marks in math & science	6/10	60	79	53.7	23	13.2	102	31.8
Answered all the science, math & general knowledge questions correctly	15/15	100	21	14.3	3	1.7	24	7.5
60% marks in math, science & GK	9/15	60	94	63.9	53	30.5	147	45.8
Very poor performance	Max 9/29	<33	22	15.0	19	10.9	41	12.8
Pass	10/>	>33	125	85.0	155	89.1	280	87.2

elementary level but also beyond this level needs to be taken up too seriously (Table12).

Conclusion

The school infrastructure in rural Punjab is satisfactory but what lacks is the institutionalization of the infrastructure, which is rather more important. As against the sanctioned posts in the government schools, which have a broader responsibility of catering to the rural students and also provide competition to the private schools, there were only 73 per cent of the teachers

positions and even 32 per cent of them were not present excluding even those on leave on the day of the visit to the school. The private rural schools did not have the vacant posts and all were present on the day of the visit including only 4 per cent on leave though in the sample one private school did not have the trained science teacher.

The proficiency of the students in respect of answering the science and mathematics questions was very poor. There were 5 questions in each and the percentage of students who answered all the science and math questions was 18 per cent and 8 per cent only, respectively.. As many as 17 and 13 per cent students did not answer correctly even a single question of science and math respectively. 78 per cent rural students in Punjab could not answer simple addition and subtraction There were only 8% students who answered all the questions correctly. The results reflect the inadequate attention given to mathematics.

The top level students, who scored more than 80 per cent marks, were about 6 per cent 46 percentage of students who scored more than 60 per cent marks in math, science and general knowledge put together was found to be 46 percent. These are not small percentages, given their environment, at this level, but then fewer of them finding admissions to /going for higher level of education when they pass out from the school level throws a clue that the learning environment of the rural students beyond the elementary level also needs to be taken up too seriously.

Policy implications

It is high time that administrators, policy makers, academicians and intellectuals come together to address the situation in earnest and formulate some action plan to streamline the otherwise potential rural youth in the development process where quality education is a pre- requisite. The foremost task before government is to bring about some structural changes in the education system itself. It is purposed that a well equipped government higher secondary school with all the modern machinery and optimal teacher pupil ratio should be established at the central place (may be at block level) catering to the needs of ten to twelve villages.Each school should have at least 4

teachers; i.e. one each for 25 students and this strength should be maintained all the time. For monitoring the quality of education of these schools, the Headmaster or Principal of the nearest High / Senior Secondary school should be made responsible. For this service they should be paid an additional allowance / honorarium. To ensure proper presence / attendance of teachers, bio-metric system should be introduced on priority. An efficient system of monitoring the quality of education of the private schools (including those attached with the Central Board of Secondary Education – CBSE) should also be put in place.

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