Impact of the per pupil expenditures on the student achievement at secondary stage in Punjab (Pakistan)

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IMPACT OF PER PUPIL EXPENDITURES ON THE STUDENT ACHIEVEMENT AT SECONDARY STAGE IN PUNJAB

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Abstract

The paper investigates the impact of per pupil expenditures on the student achievement at secondary stage in rural and urban areas in Punjab. The researchers use the data of per pupil expenditure, pupil teacher ratio and student achievement at secondary stage. The study finds that impact of per pupil expenditures on the student achievement is insignificant. However, the direction of relationship is negative in the case of rural arts, urban arts and urban science students but it is positive for rural science students. Resultantly, there is a lower level of student achievement. The study concludes that there are many discrepancies in the allocation and utilization of funds. The major policy implication of the study is that if funds are equalized or properly allocated and effectively utilized, the student achievement and the quality of education may be improved.

***Keywords*:** Per pupil expenditure (PPE), pupil teacher ratio (PTR), development expenditures, recurring expenditures, operating expenditures, prior achievement, student achievement

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Both the economic development and the educational development of a country affect each other. An effective education causes for the economic development positively and consequently more potential in the form of funds and resource inputs, a country earns. Therefore it spends more on education whereas more spending on education helps in the higher growth of human capital which is an important resource input for the economic development. Moreover, the government as well as society is spending a huge amount of money directly and indirectly on education. Society spends (direct cost) and also suffers loss or sacrifices (indirect cost) both at the same time. In this way, it can be said that the total contribution of the society is the sum of total money spending and total of the sufferings or losses. The government also spends directly and indirectly on students. Expenditures on administration, pensions to the retired persons from education, refresher courses or trainings to the teachers and administration, planning and formulation of policies and plans, and implementations of plans are indirect spending on students. Direct expenditures are developmental as well as non developmental. Moreover, pay and allowances to the educational personnel and staff, budget for school expenses and books provided to students are the direct expenditures on students. Expenditures are the most important resource input which direct and predetermine the provision and allocation of all other resource inputs to the educational institutions. In this way, it is the most important school resource input. Moreover, the quantity and the quality of all the school resource inputs depend upon the school expenditure.

It is a bitter fact that there are discrepancies in the policies and strategies of allocation, provision and utilization of funds provided to the education sector and then to different sub-

sectors and the levels of education. These discrepancies are based on political pressure, regional biases, lack of competencies and negligence in allocation, provision and utilization of funds. Political pressure and regional biases are the issues which are not the target of the study. The lack of competencies and negligence in allocation, provision and utilization of funds leads the system to the less productive. In this way, a poor nation which can not afford even minor errors and omissions in allocation, provision and utilization of funds, has to suffer great losses owing to these discrepancies. There is the need to investigate this situation thoroughly. This study investigates the impact of per pupil expenditures (as a result of the lack of competencies and negligence in the allocation, provision and utilization of funds) on student achievement at secondary stage in Punjab.

Literature Review

System and the infrastructure of a country with its resource inputs is the guarantee of its development. These are two belongings which devise a developing country into the developed, the developed into developing or run the country smoothly on the long run warded while this country is lacking both in its system and infrastructure, and basic resource inputs. The fast and the effective use of the resource inputs show the dedication and commitment of a nation. The level of spending is an indicator of the use of resource inputs and is a key indicator of governments' dedication and commitment. It is the reality that Pakistan is now on just twelve countries of the world which spend less than 2 percent of GDP on education (ICG, 2004). It is the reality that education enjoys the highest priority on the social sector agenda but it is poorly funded when compared to other sectors (Govt. of Pakistan, 2003).

Allocation and Actual Utilization

Another factor is misallocation of funds to various levels of education and various areas of the country. Recently, the allocation of government funds is skewed towards higher education benefiting the upper income class many of such highly educated persons go

abroad and then most of them do not return the country causing a large public loss (Memom, 2007). Secondary education has not been given the due importance and it has always been neglected as compared to primary education. The following financial allocation through ESR shows this bitter fact:

Table 1
Financial requirements for Education Sector Reforms (2001-05) (Rs in billions)

Programs	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**Total**	**%**
Literacy campaign	0.8	2.0	2.5	3.0	8.3	8.3
Elementary education	4.0	9.0	10.0	11.0	34.0	34.
Secondary education	1.0	3.0	3.0	3.0	10.0	10
Technical education	0	3.0	5.0	7.0	15.0	15
College/ Higher education	1.0	3.0	3.0	3.0	10.0	10
Mainstreaming madrassahs	0	5.0	5.0	4.0	14.0	14
Public-Private partnership	0.1	0.2	0.2	0.2	0.7	0.7
Quality assurance	1.0	2.0	2.0	3.0	8.0	8
Total	7.9	27.2	30.7	34.2	100	100

Source: ESR 2001-05

Funds are also misallocated on the base of rural and urban areas, and other special grants to the specific institutions. Significant differences exist in the educational facilities provided to rural and urban government schools on the basis of sources of funding, especially with regards to institutions receiving funding from the Federal Government (government model colleges, cadet colleges etc.) as compared to ordinary government schools or municipal-run local schools. (PILDAT, 2008, p. 12)

Allocation to the education sector at provincial level is between 20 to 30 percent of total budget and meets greatly the recurring expenditures. The development expenditures, necessary to generate future national assets are less than 10 percent for Sindh and Punjab where as 15 to 20 percent for NWFP and Balochistan. Moreover, the allocation of resource inputs at the districts of Punjab and Sindh show the equivalent situation as for the provincial level. (Husain, Qasim, and Sheikh, 2003, p. 779)

Table 2

Allocations to Education by Sub-sector (FY2002-03) [Percentages]

	Total Expenditures			Development			Recurrent		
	Primary	Second.	Others	Primary	Second.	Others	Primary	Second	Others
Punjab	68	22	10	64	19	17	68	22	10
Sindh	50	29	21	35	22	42	51	29	19
NWFP	61	27	12	71	22	7	59	28	13
Balochistan	46	29	25	45	31	24	45	30	25
Pakistan	55	23	22	47	19	34	55	24	21

Source: Federal and Provincial Budget Documents.

The major challenge in improving quality remains the ineffective planning and management ability of the Ministry of Education at federal level. The result is that regardless of much need, less than fifty percent of the funds allocated for development expenditure are utilized (Aly, 2006). First the allocation process is time consuming. The budget has to be approved by the Ministry of Education, Ministry of Finance and accounts committee respectively before reaching the relevant project taking approximately two months. Most of the time, as the budget reaches the target project, the annual budget year comes to end and the funds expire. Secondly, in case of the funds reach the target project in time, there are problems of implementation due to weak planning capacity the gross root level. The concerned officials, mostly, do not know the rules or don't have clear policy or strategy thus the funds are left unspent. (Bano, 2007, p. 31)

It is also the reality that the low budgets allocated to the education sector at federal level are not fully spent except for the year 2001-02. Balochistan spends a comparatively higher percentage of the allocated education budget. It is also evident that the highest proportions of the education budgets are spent on recurrent activities as salaries. This is the weak absorption capacity that only less than fifty percent of the total funds allocated for development expenditure of the Ministry of Education at federal level are actually utilized. (Aly, 2007)

The following tables show that a large portion of the allocated budget remains unspent.

Table 3
Allocated and Actual Expenditure in Education (1998-99 to 2004-05)

	Allocated Budget			Actual Expenditures			Percent Utilization		
PUNJAB	Total	% Dev	% Recur	Total	% Dev	% Recur	Total	% Dev	% Recur
1998-99	32,541	8	92	22,298	4	96	69	34	72
1999-00	31,527	5	95	13,336	3	97	42	25	43
2000-01	32,464	5	95	24,941	1	99	77	15	80
2001-02	31,682	4	96	27,472	2	98	87	43	89
2002-03	32,520	4	96						
2003-04	46,008	17	83						
2004-05	12,561	34	66						
Average		**7**	**93**		**3**	**97**	**69**	**29**	**72**
PAKISTAN*									
1998-99	69,927	11	89	48,337	4	96	69	25	75
1999-00	69,964	11	89	43,457	5	95	62	28	66
2000-01	72,238	9	91	56,571	3	97	78	26	83
2001-02	69,250	10	90	66,290					
2002-03	79,478	12	88						
2003-04	111,475	21	79						
2004-05	52,299	36	64						
Average		**12**	**88**						

Source: Federal and Provincial Budget Documents and Finance of Accounts
**Estimates for Pakistan include estimates for FATA and ICT*

The implementation gap between allocation and utilization affects many aspects of governance, allocation and use of resource inputs. It is estimated that from 20% to 30% of developmental funds allocated to the sector remain unutilized. The fundamental causes may lie in the lack of a planning culture, planning capacity and weaknesses in the accountability mechanisms. Moreover, a further nature of implementation problem lies in corruption in the allocations of funds and their diversion systematically to personal use at most levels of the allocation chain. Resultantly it pervades the system. (Govt. of Pakistan, 2009, p. 17)

Factors liable for low utilization of funds and poor efficiency at the district level include political interference in recruitment, postings, and transfers, and lack of training mechanisms and accountability within the education system (PILDAT, 2008, p. 12). Another factor is that recurring funds are provided to the institutions or the concerned targets very late. Resultantly, the leadership or the management can not fulfill the recurring demands and needs of schools or colleges; therefore, the quality is compromised. Moreover, the management prepares the fictitious or bogus receipts to draw funds for the period funds have not been spent. It has been

noted from the school or college audit that funds have been utilized for providing the facilities which have not been provided actually for example the ice in winter and coal for heating in summer.

Expenditures at Secondary Stage

There are two main categories of expenditures at secondary stage i.e. development expenditures and non-development expenditures. All the expenditures those are spent to expand the basic physical infrastructure of the school such as expansion or construction a new building, purchase of equipments, or preparing a new playground etc are the development expenditures. Recurrent expenditures include all types of expenditures which incurred in the school in addition to the development expenditures. Furthermore, pay and allowances, operating expenses, benefits to the deceased and scholarships to the students, and, repairs and maintenance, all, are the non development expenditures. There are departmental or administration expenditures which are 50% of the above expenditures. In this way, total per student expenditures are 150% of the actual calculated expenditures. But these departmental expenditures are not included in calculating per student expenditures and only the school expenditures are calculated to work out PPE.

The study deals with the non developmental that is direct spending on students, includes salary and non salary expenditures. Salary expenditures are more than the 90% of the total recurring expenditures in the education sector; it is the lion's share in the total expenditures in educational institutions. Salary or pay includes basic pay of officers and all other staff, and allowances include all types of allowances related to the employees. Non salary expenditures are incurred in the school on the behalf of the provincial or the district government. The provincial or the district government remits the amounts in form of budget and regular payments to school drawing and disbursing officers (DDO's). Likewise, the non salary allocation for education remained below 5% of the total funds allocated for salary

expenditure in last few years. In many cases, the educational management is unable to utilize fully this meager amount of money allocated under non salary head.

Operating expenses include total communication, total utilities, total travel and transport, total occupancy cost and total general expenses. As well, repair and maintenance expenditures of furniture and fixtures, machinery, building or other are included in the repair and maintenance. Furthermore, some of the expenditures are incurred through the local income of schools in the form of farogh-e-taaleem fund (FTF) in addition to the allocated money to schools.

Per Pupil Expenditures (PPE)

Dividing the total expenditures by the total number of students gives us PPE. Following is the table exhibiting PPE in the different countries.

Table 4
Per Pupil Expenditures (Public) on Secondary Education

	Earliest	2000	2005	Latest
China	11.5 (99)			
Hong Kong, China		17.7 (01)	19.6	16.5 (07)
Japan	20.9 (99)	21.2	22.4	
Republic of Korea	15.7 (99)		23.4	
Malaysia		22.6	20.3 (04)	
Philippines		10.8	9.1	
Thailand	15.5 (01)		15.2 (04)	
Bangladesh	13.4 (99)	11.9	16.0	
Bhuttan		70.1		
India	24.7 (99)	24.4	16.7	
Iran (Islamic Rep.)	9.9 (01)		11.2	22.3 (07)
Nepal	13.1 (99)	11.6	9.6 (03)	
Pakistan	-------	-------	-------	
Turkey	14.3 (01)		17.8 (04)	
Australia	15.4 (99)	14.7	15.4	

Source: Statistical Year Book for Asia and the Pacific 2008

According to Govt. of Pakistan (2007), total amount of 5347.987 million rupees has been spent against the total enrolment of 1501712 in the girls' secondary schools in the session 2005-06 while administration expenditures has not been included in the total secondary expenditures (p.4). In this way, PPE in the girls' secondary schools is 3561 rupees.

Discussion about school expenditures started with the Colman report in 1966. Findings of this report were that PPE, with the other school resource inputs showed very little relation to achievement if the social background and attitudes of individual students and their schoolmates were held constant (Colman Report, 1966, p. 325). Some researchers treated the increased expenditures as an indicator of progress, and concluded that there was a significant relationship between expenditures and student achievement because more expenditure provided smaller class size with the more qualified teachers (Ahmad, 1993; Hedges, Laine, & Greenwald, 1994; Greenwald, Hedges, & Laine, 1996; Hedges & Greenwald, 1996; Eide & Showalter, 1998; Krueger, 1999; Guryan, 2000; Tow, 2006; Kang, 2007). But many others insisted that the relationship between the expenditures and the student achievement was weak or non-existent because schools did not effectively use the funds to improve the learning environment (Hanushek, 1989a; 1989b; 1991; 1994; 1996a; 1996b; 2003; Pritchett, 2004; Wobmann, 2003; Lips, Watkins & Fleming, 2008). But some of the researchers found mixed results (Levacic et al., 2005). Therefore, still it remains the controversy among educational researchers over this issue.

Hanushek (1989) found that there was no strong or systematic relationship between school expenditures and student performance. On the basis of a meta-analysis of a sub sample of the same data used by Hanushek (1989), Hedges et al. (1994) concluded that there was strong evidence of at least some positive effects of PPE on outcome. Furthermore, scholastic factors including school finance were subjected to significant correlation with examination results and a positive effect on education standards might be obtained if suitable conditions were created in relation to this factor (Ahmad, 1993).

Hanushek (1994) criticized Hedges et al. (1994) and their method of eliminating equations from the meta-analysis in which the effects of expenditures were non significant but the

direction of effects were unknown. The researcher concluded that this had the effect of completely ignoring 30% to 40% of the estimates. Hedges et al. (1994) defended their criteria for eliminating equations from Hanushek's sample. The researchers also proved that by eliminating equations from the meta-analysis, results still showed strong evidence of positive effects and little evidence of negative effects. On the both sides, the researchers concluded that expenditures did matter somehow or sometimes, but they did not agree on the direction, strength, or consistency of the relationship between expenditures and student achievement.

A meta-analysis of studies of EPF equations concluded that a broad range of resource inputs were positively related to student achievement, with effect sizes large enough to suggest that moderate increases in expenditures might be associated with significant increases in achievement (Greenwald et al., 1996). Hanushek (1996a) again objected to the methodology, especially the sample selection procedures but admitted that resource inputs were used effectively only in certain circumstances when coefficients were positive and significant (p. 402). Hanushek & Hedges et al. agreed on "effective resource use," in Hanushek's (1996a) words, or "how money matters" in the words of Hedges et al (1994). Moreover, the main concern of researchers and policy makers was to enlighten the mechanisms through which school expenditures could efficiently promote learning. But the researchers of both the studies disagreed on the extent to which school expenditure improved students' achievement.

Eide & Showalter (1998) estimated by using quintile regressions and found that PPE have larger effects on math scores for the bottom tail of the math score distribution than for the rest of the distribution. Therefore, the study showed that school resource inputs had heterogeneous effects on students of different achievement. Likewise, some experimental research suggested that a type of expenditures in the form of the small class size had a

significant effect on student achievement (Krueger 1999). In addition, by using a quasi experimental research design, Guryan (2000) found that increases in school funding had increased the performance of students in the elementary schools of Massachusetts.

The analysis of cross country data concluded that the relationship between expenditures on education and student performance was weak at best and sometimes non-existent (Hanushek, 2003; Pritchett, 2004; Wobmann, 2003). Likewise, PPE had a statistically significant positive effect on KS3 achievement in math and science; however, it did not appear to impact on student achievement in KS3 English (Levacic et al, 2005). In addition, through the analysis of cross-sectional and panel data, it is found that, though small, there was significant effect of school funding on student academic achievement (Tow, 2006).

Kang (2007) conducted the study "Does Money Matter? The Effect of Private Educational Expenditures on Academic Performance" and examined the effect of private educational expenditures (private tutoring expenditures in South Korea) on student achievement (standardized test scores). The study used the causal estimates based on IV methods and implied that a 10 percent increase in expenditure on private tutoring lead to a 0.56 percentile point improvement but effect of the mean value, this amount of was equivalent to a 1.1 percent increase in test score.

Despite the lack of consistent findings, leading researchers have recognized that any effect of PPE on student achievement depends on how the money is spent, not on how much money is spent. "Few people…would recommend just dumping extra resources into existing schools. America has followed that program for several decades, with no sign that student performance has improved (Hanushek)". (Lips, Watkins & Fleming, 2008, p. 4)

Research Objectives

1. To identify the prior achievement
2. To identify the per pupil expenditures at secondary stage of education
3. To identify the academic achievement of students at secondary stage
4. To analyze the impact of per pupil expenditures on the academic achievement

Data Resources & Methodology

The study investigates the impact of PPE on the student achievement at secondary stage i.e. the two years period (Class IX session 2006-07 and Class X session 2007-08). Population of the study comprises of all the 4802 secondary schools, all the 87796 secondary teachers and all the secondary students in Punjab. Two districts are randomly selected from each of the three clusters: Northern, Central and Southern Punjab. Then 4 rural and 4 urban girls, and at the same time, 4 rural and 4 urban boys schools are randomly selected comprising a total of 16 from each district. In this way, the study uses a total of 96 schools, and a maximum of 20 students proportionately and randomly (from the arts and the science streams) selected from each school.

The study identifies the data regarding expenditures in the two years period at secondary stage (Session 2006-08) through an instrument[1]. PPE has been calculated by dividing the total expenditures at the secondary stage by the student enrollment in the two years period. The study uses the longitudinal data of student achievement collected through 'result sheet'. Mean of the annual marks of classes VI (2003-04), VII (2004-05) and VIII (2005-06) has been used as prior achievement (PA) but marks of Class X through the Annual SSC Examination 2008 have been used as the student achievement at secondary stage (2006-08). The result sheet

[1] The authors have themselves developed the instrument which includes all the recurring expenditures including teacher salary and operating expenditures at secondary stage. Detailed expenditure profile can be provided if required.

data are collected through school records and the relevant BISE but student achievement of 4860 secondary students has been used in the study. The pupil teacher ratio (PTR) is the most important input which influences PPE; therefore, the PTR data are also calculated from the teachers' strength and the student enrollment at school level. The collected data are tabulated and analyzed at school level and then the data in the final form showing the between school variation has been shifted into SPSS table. Through SPSS, Linear Regression analysis is used to analyze and find out the differential impact of PPE on student achievement.

Results and Findings

The PPE is higher but PTR is lower in the rural areas while they are lower and higher respectively in the urban areas. The descriptive statistics shows that there are great discrepancies in the allocation of funds and resources to the schools. There is much difference in the PPE and PTR that leads the wastage of funds and resources.

Table 5
Descriptive Statistics

	PPE		PTR	
	Rural Schools	Urban Schools	Rural Schools	Urban Schools
Mean	14925.0	8314.	18.1	37.4
SD	7847.2	5714.4	8.6	17.8
Min	3621.5	1500.1	5.5	14.1
Max	43655.7	39405.4	37.9	92.3

Table 6
The Differential Impact of PPE on the Student Achievement for Rural Arts Students

Coefficients[a]					
No. of Rural Schools with Arts Classes N = 41 Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-55.461	23.376		-2.373	.023
Prior Achievement	.987	.047	.956	20.912	.000
Per Pupil Expenditures	.000	.000	-.026	-.563	.577

[a] Dependent Variable is Student Achievement

Table 7
The Differential Impact of PPE on the Student Achievement for Rural Science Students

Coefficients[a]

No. of Rural Schools with Science Classes N = 36 Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-8.532	36.736		-.232	.818
	Prior Achievement	.906	.061	.947	14.885	.000
	Per Pupil Expenditures	.001	.001	.044	.694	.493

[a] Dependent Variable is Student Achievement

Table 8
The Differential Impact of PPE on the Student Achievement for Urban Arts Students

Coefficients[a]

No. of Urban Schools with Arts Classes N = 45 Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-35.847	20.601		-1.740	.089
	Prior Achievement	.951	.042	.984	22.543	.000
	Per Pupil Expenditures	.000	.000	-.086	-1.976	.055

[a] Dependent Variable is Student Achievement

Table 9
The Differential Impact of PPE on the Student Achievement for Urban Science Students

Coefficients[a]

No. of Urban Schools with Science Classes N = 48 Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-44.801	25.073		-1.787	.081
	Prior Achievement	.998	.042	.956	23.743	.000
	Per Pupil Expenditures	.000	.000	-.047	-1.179	.245

[a] Dependent Variable is Student Achievement

Table 6, Table 7, Table 8 & Table 9 present the magnitude of the differential impact of PPE and prior achievement on the student achievement as measured by Linear Regression analysis coefficient. The t-value is highly significant for prior achievement for both arts and science students in rural as well as urban areas. It shows that prior achievement has a highly significant role in producing student achievement. But insignificant t-values for PPE for arts and science students in rural as well as urban areas show that there is no impact of PPE on the student achievement. But the relationship of PPE with the student achievement is negative for

rural and urban arts, and urban science students. It is derived that PPE has a negative and significant role in producing student achievement. But impact of PPE on the student achievement is some positive but insignificant for rural science students. Overall, the study finds mixed effects. As figures show that average PPE is lesser with the higher student achievement in the urban areas but it is higher with the lower level of student achievement in the rural areas. It means that more funds have negative effects in the rural areas. Actually parents and students prefer the schools where there is already better academic environment, teachers and other resource inputs are being used effectively; therefore, PTR is higher in such schools.

The present study supports the findings of Colman report (1966) that PPE and the other school resource inputs showed very little relation to achievement if the social background and attitudes of individual students and their schoolmates were held constant. It also supports Hanushek (1989a; 1989b; 1991; 1994; 1996a; 1996b; 2003), Pritchett (2004), Woßmann (2003) and Lips, Watkins & Fleming (2008). They insist that the relationship between the expenditures and the student achievement is weak or non-existent because schools do not effectively use the funds to improve the learning environment. It is right that schools are not effectively using the funds.

The findings are not in line with those of Ahmad (1993), Hedges, Laine, & Greenwald (1994), Greenwald, Hedges, & Laine (1996), Hedges & Greenwald (1996), Eide & Showalter (1998), Krueger (1999), Guryan (2000), Tow (2006) and Kang (2007) which treated the increased expenditure as an indicator of achievement and concluded that there was an insignificant relationship between expenditures and student achievement. In case of rural science students, the findings are consistent with Grissmer (2000) which finds that NAEP scores are higher in the states where there are higher PPE. While considering the

salary expenditures, the study finds out that it has no significant effect on the academic achievement. It supports Iida et al (2002). Overall, the findings of the study are in the line with Levacic et al. (2005) that concluded that PPE had mixed effects on student achievement in KS3 English.

Conclusions and Policy Implications

The present study finds that funds or resource inputs are misallocated, mismanaged and inefficiently used or exploited in the secondary schools of Punjab, Pakistan. The present study also finds that PPE, mostly, has a negative impact while there are findings of many studies for the lower income countries that the impact of school and teacher quality factors on student performance was comparatively greater than family socioeconomic status (Heyneman & Loxley (1982, 1983). The teacher salary is the major portion of the funds allocated to schools in Punjab i.e. more than 90%. Likewise, the study concludes that it is the misallocation, mismanagement and the worst use or the exploitation of funds and resource inputs that is responsible for lower academic achievement as Lips, Watkins & Fleming (2008) concluded that the important is how the money is spent, not on how much money is spent.

First is the misallocation of funds. Teacher salary is the main component of expenditures while most of the rural schools have higher PTR and PPE but lower student achievement. This very expensive discrepancy should be removed so that the funds may be equalized. If funds are equalized taking average of the urban PPE i.e. 6846[2] rupees and applied to all the rural secondary schools, 23.36 million[3] rupees (within two years in the 48 rural schools)

[2] Total expenditures 148202208 rupees (including the salary of head teacher but except other administration) divided by 21648: the total enrolment of students at secondary stage of the 48 urban secondary schools .

[3] Actual expenditures (109671300 rupees) minus (6846*4598: total enrolment of students at secondary stage) in the 48 rural secondary schools

while 2179.24 million[4] rupees in Punjab in one year, in the form of extra resources inputs are being misused, inefficiently used or remain unused. Second is the management of funds or resource inputs. It is responsible for the effective use of resource inputs. Moreover, district, divisional, provincial and federal management which contribute 50% of the total institutional expenditures, is a white elephant. It should be removed and the funds should be shifted to the educational institutions. The educational institutions should be managed only by the local managers i.e. head teachers or principals with local boards of governors. In this way, approximately 100 million rupees[5] may be shifted from the administration expenditures to the educational institutions directly. Third point is the optimal level of usage of funds or resource inputs as Hanushek (1996a) concluded that resource inputs were used effectively when coefficients were positive and significant (p. 402). The negative sign shows the ineffective use of funds and resource inputs. The optimal level of usage should be identified at rural and urban areas and it should be ensured that funds or resource inputs are being used at their optimal level. It is the policy implication of the study that PPE may have positive and significant effects if funds or resource inputs are properly allocated or equalized and effectively utilized at the optimal level of their usage, the academic achievement in specific and the quality of education in general may be improved to a large extent.

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[4] Actual Expenditures 46.72/9196*428943 (Enrolment of students at the secondary stage)

[5] It is the 50% of the total recurring expenditures on 96 schools at the secondary stage

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