IMPACT OF SCHOOL RESOURCES ON THE ACADEMIC ACHIEVEMENT OF STUDENTS AT SECONDARY LEVEL
IN DISTRICT LAYYAH

Riffat Tahira, Almas Kiani and Muhammad Arshad Dahar
Department of Education, PMAS Arid Agriculture University Rawalpindi, Pakistan.
Corresponding Author's Email: drarshad1969@hotmail.com

ABSTRACT: *The study was conducted to investigate the impact of school resources on the academic achievement at secondary level. The objectives of the study are: to identify the extent of availability and use of school resources, to identify the academic achievement of students and to find out the differential impact of school resources on the academic achievement of students. School resources include computers per students, appropriate drinking water, library books per students in the school, appropriate chalkboard/ blackboard per class section, playgrounds in the school, boundary wall per school, toilets per student in the school, laboratory rooms, sports material, classrooms per class sections, furniture per student and text books per student. The population of the study comprised all the head teachers and secondary students in the secondary and higher secondary schools of District Layyah. Overall, a total of 40 head teachers and 400 students from 40 schools (20 girls and 20 bots) were the sample of the study. The study identified the availability and use of school resources through the "School profile Performa" and the "Questionnaire". The information about academic achievement of students was collected through "Result Sheet". The data were analyzed at school level and then collectively for the final analysis through Statistical package for social sciences (SPSS). Stepwise Regression analysis was used to find out the differential impact of school resources on academic achievement of students. The study found that the overall school resources have insignificant impact on the academic achievement of students. In this way, school resources do not influence much the student learning and resultantly academic achievement of students. The study concluded that the availability of school resources is very less and that this varies from school to school. In this way, the allocation of school resources is not unjustified and skewed. Likewise, the variation in all variables is also very clear. The study concluded that the role of school resources is not important as they may not be properly and efficiently used; therefore, they have insignificant impact on the academic achievement of student. The allocation policy may be revised for school resources and it may be based on resource equity for all students. In this way, all students have equal chances of success. In this way, school resources may be used efficiently and they are effective, and the differential impact of school resources on academic achievement may be improved.*

Keywords: *Schoosl resources, academic achievement*

INTRODUCTION

School resources are the important determinants of student achievement; however, these have less impact on the academic achievement of students than the impact of family background, SES of student and peers, effects of students [1]. The researchers have come up with different conclusions regarding the evidence of relationship of school resources with student achievement. Some reported that the impact of school resources on academic achievement of students could be more pronounced. This discourse that followed, tried to explore and examine the extent of the impact of school resources on academic achievement of students at secondary stage in school [2].

School resources may be proved to be the vital determinant of measuring academic achievement of students at secondary stage of school provided that factors which are directly or indirectly related to academic achievement of students are controlled as [3] concluded that: "School factors are important predictors of student achievement net of the effects of student background" (p. 37). Hanushek conducted several studies on this issue and concluded that supplementary school resources have little impact on academic achievements. After another study [4] remarked that "the general inefficiency of resource usage are unlikely to be overturned by new data, by new methodologies, or the like" (p. 2) and that "altered sets of incentives could dramatically improve the use of resources" (p. 38).

However, the studies of other researchers [5, 6, 7] on school resources opposed [4] and made a point that Hanushek's

collections and explanation of the earlier studies were improper and unsuitable. According to them, the meta-analysis made by [4] had different understanding of the issue and therefore his conclusions are faulty ones. But still this impact has educational significance. Another researcher [8] supported [7] that sample of the estimates of the research of Hanushek's was biased. However, the findings of [8] were different from developed to developing countries.

The research on school resources expanded from United States to the European and the developing countries. The study [9] referred to few European EPF studies. These studies have yielded varied result, where researchers assign that school resources have greater, little or no impact, and some even recorded negative impact of school resources on the academic achievement of students at secondary stage in school.

The two important points about the school resources are the provision and the availability, and the use of school resources. Policy regarding the provision and availability of school resources is decided carefully considering all factors affecting the educational process. It was clarified that if school resources are not used efficiently and appropriately then, connection between school resources and their subsequent impact upon academic achievement of students lost its meaning and utility [4]. The scenario remains opaque and bleak. This demands to carefully handle the school resources and resultant outcomes. (p. 4)

In Pakistan, yet, there are many big flaws and inefficiencies in the quality of education system of the country. It was

examined that, by and large, there had been a declining trend in the provision of quality of education in Pakistan, and especially the science education is at the lowest level [10]. The laboratories were not fully equipped and the curriculum failed to cater the needs and demands of the time. In a nutshell, the schools were not performing up to the mark. Another document [11] also described that Pakistan is in the bottom list of countries that are providing fewer resources to its educational institution.

Accordingly, in the light of above discussion, the upcoming educational reforms in the country, a great importance is given to proper allocation, availability and use of school resources. The government spending is heavily in educational field, but unfortunately a great number of schools could not benefit from this heavy investment in school resources, due to core issue of mismanagement and misallocation of school resources. As a result, the situation demands tactful handling by identifying the problems in order to overcome the present state of affairs [10]. Identifying researches on school resources, this study provides an overview of the current state of knowledge and investigates the relationship of school resources with the academic achievement of students at secondary stage in schools.

OBJECTIVES OF THE STUDY
The objectives of the study are the following:
1. To identify the extent of availability of school resources
2. To identify the academic achievement of students
3. To find out the differential impact of school resources on academic achievement of students

SIGNIFICANCE OF THE STUDY
It is very possible that this study will guide teachers and school managers and education personnel to monitor the provision and the use of school resources in schools in a better way.

DELIMITATIONS OF THE STUDY
The study was delimited to the Secondary stage of education in the Public schools of District Layyah. Aggregate marks of students in the Annual SSC Examination 2015 at secondary stage were taken as academic achievement. School resources school resources include computers per students, appropriate drinking water, library books per students in the school, appropriate chalkboard/ blackboard per class section, playgrounds in the school, boundary wall per school, toilets per student in the school, laboratory rooms, sports material, classrooms per class sections, furniture per student, textbooks per student.

METHODS AND PROCEDURE
This study is empirical and correlational. The study attempted to find out the differential impact of school resources on the academic achievement. School resources are the independent variables in this study and the dependent variable is academic achievement.

Population
The students of 10th Grade of public secondary and higher secondary schools who appeared in the Annual SSC Examination 2015 in District Layyah were the population of

the study. Most of the people of District Layyah live in rural areas because of the small urban population.

Sample
At the first stage, 40 high schools (including higher secondary schools) were selected from District Layyah. These schools were selected from urban and rural areas based on random sampling technique. At the second stage, 10 students were randomly selected from each school. However, if there were students $\leq$ 10 in Class X in a school, all these students were selected. Furthermore, 10 students were selected from science and arts stream on proportionate random sampling method.

Research Instruments
A School Profile Proforma was developed to collect the information regarding the availability of school resources from the records of schools. Through second instrument "Result Sheet," the aggregate marks of the students for The Annual SSC Examination 2015 were recorded from the Gazettes of the relevant boards of intermediate and secondary education.

Data Collection
The data were collected in person where possible. However, some research assistants were also employed for help during the data collection process. Other means of communication such as telephone, mail, and email were also used where the researcher could not collect data personally.

Data Analysis
The data were summarized and analyzed first at school level. Mean was used for the interval data of school profile Proforma. Then, qualitative data of the questionnaire were transformed into the quantitative data. Likewise, the computed mean of aggregate marks of The Annual SSC Examination 2015 was computed at school level. Then this mean data were carried into both the data files in SPSS as a dependent variable. Regression analysis was used to find out the differential impact of school resources.

ANALYSIS AND INTERPRETATION OF DATA
This chapter deals with analysis, interpretation and discussion of the data collected through school profile Proforma for school resources and result sheet for student achievement.

After the collection of data, school level raw data were summarized showing the between school variation. Computers per Students, Appropriate Drinking Water, Library Books per Students in the School, Appropriate Chalkboard/ Blackboard per Class Section, Playgrounds in the School, Boundary Wall per School, Toilets per Student in the School, Laboratory Rooms, Sports Material, Classrooms per class sections, Furniture per Student and Text Books per Student were calculated through the respective tables.

Then this data were shifted in to a table showing between school variations (Appendix-II). Later on this data of Apendix-II were transferred to SPSS for the final analysis. The following Tables 1-3 were developed for the regression analysis calculated by SPSS. Table 1 shows the descriptive statistics, Table 2 shows the coefficients of and Table 3 shows ANOVA of this model.

Table 1 shows the mean and Standard deviation of the data of 40 secondary schools. Standard deviation (79.09324) shows that there is much variation in the academic achievement of

students. Likewise, the variation in all other variables particularly is also very clear.

Table1: Descriptive Statistics

School Resources and Academic Achievement	Mean	Std. Deviation	N
Academic Achievement	680	79.09324	40
Laboratory Rooms	1.4000	.87119	40
Classrooms per class sections at Secondary Level	.9037	.19624	40
Furniture Per Student at Secondary Level	.7888	.19353	40
Computers Per Students at Secondary Level	.0397	.06307	40
Library Books Per Students in the School	1.6362	.92971	40
Toilets Per Student in the School	.0074	.00606	40
Playgrounds in the School	.9250	.76418	40
Boundary Wall Per School	.8887	.25956	40
Text Books Per Student at Secondary Level	.9875	.17858	40
Appropriate Chalkboard/ Blackboard Per Class Section at Secondary Level	.6231	.16399	40
Sports Material	1.1750	.54948	40
Appropriate Drinking Water	2.1750	.44650	40

Table 2: Impact of School Resources on Academic Achievement of Students

Model	Unstandardized Coefficients		Std. Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	817.454	174.789		4.677	.000
Laboratory Rooms	37.271	26.893	.411	1.386	.178
Classrooms per class sections	-89.303	162.743	-.222	-.549	.588
Furniture Per Student	33.079	131.237	.081	.252	.803
Computers Per Students	-28.901	257.872	-.023	-.112	.912
Library Books Per Students	16.011	16.052	.188	.997	.328
Toilets Per Student in the School	-13.456	2569.361	-.001	-.005	.996
Playgrounds in the School	-5.018	22.262	-.048	-.225	.824
Boundary Wall Per School	86.029	70.786	.282	1.215	.236
Text Books Per Student	-137.327	166.368	-.310	-.825	.417
Appropriate Chalkboard/ Blackboard Per Class Section	-67.526	100.946	-.140	-.669	.510
Sports Material	-12.832	32.307	-.089	-.397	.695
Appropriate Drinking Water	-10.702	43.282	-.060	-.247	.807

a. Dependent Variable: Academic Achievement

Table 2 shows that all the variables except Students Teacher Ratio and Class Size have insignificant impact on the academic achievement of students as their t-value is very less. Moreover, seven variables, i.e. Classrooms per class sections, Computers Per Students, Toilets Per Student in the School, Playgrounds in the School, Text Books Per Student, Appropriate Chalkboard/ Blackboard Per Class Section, Sports Material and Appropriate Drinking Water are negatively correlated with academic achievement of students. However, all other variables are positively correlated with academic achievement of students.

Table 3: ANOVA[b]

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	87126.661	14	6223.333	.992	.489[a]
Residual	156847.239	25	6273.890		
Total	243973.900	39			

a. Predictors: (Constant), Computers Per Students at Secondary Level, Appropriate Drinking Water, Library Books Per Students in the School, Appropriate Chalkboard/ Blackboard Per Class Section at Secondary Level, Playgrounds in the School, Boundary Wall Per School, Toilets Per Student in the School, Laboratory Rooms, Sports Material, Classrooms per class sections at Secondary Level, Furniture Per Student at Secondary Level, Text Books Per Student at Secondary Level

b. Dependent Variable: Academic Achievement

Table 3 shows that F value is .992 is not in the critical region at the significant level of 0.05; $F_{(14, 39)} = .992$, $p > 0.5$. The standard deviation of the academic achievement is very less and overall impact of school resources is insignificant.

The study found the following important findings:

1. The study found that the availability of school resources is very less in schools and that there is much variation in the academic achievement of students. Likewise, the variation in all other variables is also very clear.

2. It was found that all the variables of school resources have insignificant impact on the academic achievement of student as their t-value is very less. Moreover, seven variables i.e. Classrooms per class sections, Computers Per Students, Toilets Per Student in the School, Playgrounds in the School, Text Books Per Student, Appropriate Chalkboard/ Blackboard Per Class Section, Sports Material and Appropriate Drinking Water are negatively correlated with academic achievement of students. However, all other variables are positively correlated with academic achievement of students.

3. The study found that the overall school resources have insignificant impact on the academic achievement of students. In this way, school resources do not influence much the student learning and resultantly academic achievement of students.

DISCUSSION

Educationists and researchers still have not been agreed upon a single point of view whether school resources have significant impact on student achievement or not, smaller or larger. As this study found that the availability of school resources is very less in schools and the variation in all other variables is very clear. Heyneman & Loxley (1982, 1983) and Woessmann (2003; 9; 2005b) support the findings of this study that found the significant variation in school resources or institutional differences for the lower income countries. However, the studies [12, 13] rejected the conclusion made by [14, 15].

The findings of the study that all the variables of school resources have insignificant impact on the academic achievement of student are supported by many previous studies concluded the mixed results, positive and negative effects [16 Glewwe & Jacoby, 1993; 17 Glewwe et al. 1995; 18 Kingdon, 1996; 19 Rivkin, Hanushek & Kain, 2005].

CONCLUSIONS

The study concluded that the availability of school resources is very less and that this varies from school to school. In this way, the allocation of school resources is not unjustified and skewed. Likewise, the variation in all variables is also very clear. The study concluded that the role of school resources is not important as they may not be properly and efficiently used; therefore, they have insignificant impact on the academic achievement of student.

RECOMMENDATIONS

It is the recommendation of the study to provide more and equal resources to all the students. The allocation policy may be revised for school resources and it may be based on resource equity for all students. In this way, all students have equal chances of success. In this way, school resources may be used efficiently and they are effective, and the differential impact of school resources on academic achievement may be improved.

REFERENCES

[1]   Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., & York, R. "*Equality of educational opportunity*". Washington, DC: US Government Printing Office (1996).

[2]   Nye, B., Hedges, L. V. & Konstantopoulos, S.. *"The long-term effects of class size: A five year follow-up of the Tennessee class size experiment"*. *Educational Evaluation and Policy Analysis* **2 1** (2): pp. 12 7-42(1999).

[3]   Konstantopolous, S. "*Trends of School Effects on Student Achievement: Evidence from NLS": 72, HSB: 82 and NELS: 92*. IZA DP No. 1749, pp. 10, 37(2005). Bonn: Institute for the study of Labour (2005).

[4]   Hanushek, E. A. "School Resources". In *Handbook of the Economics of Education*. Vol. **2:** Chap.14, p.3, 39. Stanford University: National Bureau of Economics (2006).

[5]   Hedges, L. V., Laine, R. D. & Greenwald, R. *"Does money matter? A meta-analysis of studies of the effects of differential school inputs on student outcomes"*. *Educational Researcher,* **23**(3): pp. 5-14 (1994a).

[6]   Hedges, L.V., Laine, R.D. and Greenwald, R. *"Money does matter somewhere: a reply to Hanushek"*. *Educational Researcher,* **23**: pp. 9-10 (1994b).

[7]   Hedges, L. V. & Greenwald, R. *"Have times changed? The relationship between school resources and student Performance". In* G. Burtless (Ed.) *Does money matter? The effect of school resources on student achievement and adult success*. pp. 74-92. Washington, DC: Brookings Institution (1996).

[8]   Krueger, A. *"Economic considerations and class size"*. *Economic Journal,* **113**(485), pp. F34–F63 (2003).

[9]   Woessmann, L. *"Educational production function in Europe"*. Economic Policy Centre for Research on Econzomic Performance ((2005)

[10] Government of Pakistan. "Education Sector Reforms (ESR): Action Plan 2001-2002". Ministry of Education (2002)

[11] Government of Pakistan. "National Education Policy 2009". Ministry of Education (2009).

[12] Baker, D. P., Goesling, B., & LeTendre, K. G.. "Socioeconomic status, school quality, and national economic development: A cross-national analysis of the "Heyneman-Loxley effect" on mathematics and science achievement". *Comparative Education Review*, **46** (3): pp. 291−312 (2002).

[13] Hanushek, E.A., & Luque, J.A.*" Eficiency and equity in schools around the world*". NBER Working Paper Series 8949. Cambridge, MA: National Bureau of Economics Research(2002).

[14] Heyneman, S. P. & Loxley, W. A. (1982). *"Influences on academic achievement across high and low income countries: A re-analysis of IEA data". Sociology of Education,* **55**(1): pp. 13-21(1982).

[15] Heyneman, S. P. & Loxley, W. A. "*The effect of primary-school quality on academic achievement across twenty-nine high-and low-income countries". American Journal of Sociology,* **88**(6): pp. 1162-1194(1983). .

[16] Glewwe, P. & Jacoby, H. "Delayed Primary School Enrollment and Childhood Malnutrition in Ghana, an Economic Analysis," Papers 98, World Bank - Living Standards Measurement (1993).

[17] Grosh, M.E. & Glewwe, P. "A Guide to Living Standards Measurement Study Surveys and their Data Sets," Papers 120, World Bank - Living Standards Measurement (1995).

[18] Kingdon , G. "The Quality and Efficiency of Public and Private Schools: A Case Study of Urban India", *Oxford Bulletin of Economics and Statistics,* **58**(1): 55-80 (1996)

[19] Rivkin, S. G., Hanushek, E. A. & Kain, J. F. *"Teachers, schools, and academic achievement". Econometrica,* **73**(2): pp. 417-458 (2005). Retrieved January 23, 2007, from JSTOR database .