IMPLEMENTATION OF STEP-BY-STEP QUALITY CRITERIA FOR STUDENT ACHIEVEMENT FROM NURSERY TO 8TH CLASS ENSURES HIGHER QUALITY OF EDUCATION AT THE LEVELS OF SECONDARY AND HIGHER EDUCATION

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Abstract

This study investigates whether implementation of the step by step quality criteria from nursery to 8th class ensures the higher quality of education at the levels of secondary and higher education. The quality criteria are the amalgamation of all the important indicators of resource inputs, process and outcomes of education. However, the quality achievement is delimited to the aggregate marks of students in the annual examinations. The quality achievement of a student at the nursery level is an indicator of learning or an aptitude to learn for the next stage. Likewise, academic achievement of a class or a stage of education is the prior achievement for the next class or the stage of education. The longitudinal data of academic achievement of 5720 students in the form of annual marks of the classes from nursery to class 8th as prior achievement, that of secondary, intermediate and B.A. B.Sc. of the same students through "Result Sheet" were collected. Stepwise Regression analysis with linear function shows the significant differential impact of prior achievement on the academic achievements of the next stages. It is derived that implementation of step-by-step quality criteria for student achievement from nursery to class 8th plays ensures the higher quality of education

at the levels of secondary and higher education. The policy implication of this study is that step-by-step quality criteria for resource inputs, process and outcomes or achievement of education should be implemented from the nursery stage of education to the higher education.

Keywords: quality criteria; resource inputs; differential impact; quality of education

1. Introduction

A system plays a very important role in the achievement of a nation, particularly the education system. Education system prepares humans who are responsible for the functions of all other systems in building a nation. The education systems of the advanced countries are very advance as compared to that of the developing countries, particularly Pakistan. A comparison can be made when some students from Pakistan go to the advanced countries with their parents and get admission there. Most of these students show the lowest performance in the beginning. However, most of them come at par with the already admitted students within one year and many of them lead their classmates in the next years. This is the quality of the education system and the enthusiasm of Pakistani nation that cause for the improvement of these students in the advanced countries. On the other hand, the local education system is very backward and is not able to impart a quality education. If an enthusiasm is created in the lives of Pakistanis through a better system of education and better educational leadership, this nation will be determined to achieve each and every target.

The quality of education system ensures the quality of education. The quality of education system can be improved if step-by-step quality criteria for the whole education system (from nursery to the higher education is implemented. What is the quality of education system? The terms efficiency, effectiveness, equity and quality have often been used synonymously (Adams, 1993). The American Society for Quality Control (Johnson & Winchell, 1990) defines quality as the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs. UNICEF (2000) describes the quality criteria for the various important aspects of education system as under:

1. Learners who are healthy, well-nourished and ready to participate and learn, and supported in learning by their families and communities;

2. Environments that are healthy, safe, protective and gender-sensitive, and provide adequate resources and facilities;
3. Content that is reflected in relevant curricula and materials for the acquisition of basic skills, especially in the areas of literacy, numeracy and skills for life, and knowledge in such areas as gender, health, nutrition, HIV/AIDS prevention and peace;
4. Processes through which trained teachers use child-centered teaching approaches in well-managed classrooms and schools and skilful assessment to facilitate learning and reduce disparities;
5. Outcomes that encompass knowledge, skills and attitudes, and are linked to national goals for education and positive participation in society.

The target of implementation of the quality criteria is the quality achievement that is indicated in the above last item no. 5. All these aspects are very important. A deficiency in any one of them causes the quality of education low. As the education system of Pakistan is very backward, there are uncountable deficiencies and drawbacks that must be improved.

A very important aspect of the education system is that achievement of a student is the prior achievement (PA) for the next stage or the level of education. Prior achievement or the prior ability of students indicates what potential students bring with them. Student achievement, at any point, is a cumulative function of the current and the prior resource inputs i.e. family inputs, SES, peers' effect and SRIs. It is the net product of the entire prior and the current resource inputs. The better PA, usually, produces better student achievement at the next stage. Therefore, this is an important resource input to the next stage of education.

According to the Coleman Report (1966), the most important resource input is socio-economic status (SES) of students. The report concluded that SRIs have hardly any effect on student achievement. However, the SES and family background of students and peers' effect were more effective in producing student achievement. However, an educationist can deal and control only the school resource inputs (SRIs). Therefore, SRIs are more addressed in the research policies. Furthermore, the availability of SRIs in a school is not enough until, they are efficiently used. The inefficient use of SRIs can not produce a better student achievement. Likewise, resource achievement of the inefficient used added SRIs in a school is not clear as Hanushek (2006) clarified it in the words:

> And, if the resource use is inefficient, the relationship between added resources and outcome is unclear. This simple observation motivates a direct investigation of the relationship between outcomes and inputs to schools. (p. 4)

The effective use of SRIs is very important in the education process; however, it depends upon the students' ability to use them. Likewise, students' ability to use the SRIs depends upon PA or the prior ability of students. Usually, a student with a higher PA or the prior ability is more active in learning process. Actually, he uses the SRIs more efficiently and gets benefits more effectively. Therefore, PA has an important role in the education process; however, its role has not been investigated through research in most of the countries of the world. For the effective use of SRIs, it is very important to investigate the role of PA. Likewise, school environment plays a very important role in the education process. Academically better school environment attracts the students of the better PA or prior ability. In this way, better PA of students with the better prior school environment boosts up the quality of education.

With the implementation of quality criteria in the nursery and class 1, the quality of student achievement may be improved to a great extent. This student achievement is the PA or the prior ability for the class 2. If the student achievement is better in the nursery and class 1, the students have the higher aptitude to learn and can use the school resource inputs efficiently. In addition, with the implementation of quality criteria in the class 2, the PA causes for the higher student achievement and enhances the quality of education. If this process is carried on in the next classes, the quality of education is improved. This improvement in the quality of education causes for improving the school environment. With the better PA of students and better prior school environment and by the continuous assessment and improvement focusing on all dimensions of system quality (learners, learning environments, content, process and outcomes), the quality of education is likely to be enhanced. The situation in Pakistan is very dismal, particularly for the elementary education in the public schools of the country. Elementary education provides the foundation to the levels of secondary and higher education. If the foundation is weak, strong building can not be built on it. In this way, the quality of education of secondary and higher education can not be improved without improving the quality of education at the elementary level.

Furthermore, the government is spending enough in the education sector and the quality of education has a declining trend in Pakistan; particularly science

education that is reaching its lowest ebb (Government of Pakistan, 2002). Government of Pakistan (2009) also insisted on maximizing the effects of resource inputs. In this way, there is a strong emphasis on the pursuit of the quality of education in the ongoing educational reforms in the country. The quality of education is dependent of the implementation of step-by-step quality criteria from nursery to higher education.

Therefore, it is the dire need to investigate the need and role of implementing the step-by-step quality criteria for education system and how PA or the prior ability of students in the education process is important in producing the academic achievement. This study provides an overview of the current state of knowledge and investigates the relationship between the prior achievement and academic achievement of students at secondary stage.

1.1 Objectives of the Study

1. To identify the academic achievement at elementary level, secondary and intermediate stages, and degree (B.A./ B.Sc) level of education
2. To find out the differential impact of academic achievement of students at elementary level on the academic achievement of students at secondary and intermediate stages, and degree level of education

1.2 Assumptions of the Study

1. Implementation of step-by-step quality criteria for resource inputs, process and outcomes of education.
2. Prior achievement (PA) or the prior ability of students and prior school environment has a strong relationship with the academic achievement of students in the next classes.

1.3 Delimitations of the Study

1. Public Institutions
2. Aggregate marks of the Classes VI, VII & VIII (The Middle Standard Examination) are taken as prior achievement (PA) of students. The aggregate marks of The Annual SSC Examination 2006, Annual Intermediate Examination 2008 and The Annual Examination B.A./ B.Sc. 2010 are taken as academic achievement of students.

1.4 Limitations of the Study

1. SES and Family-background: Owing to limited time and resources, this study cannot measure the contributions of SES, peers' group and family background at secondary stage.
2. Tuition: Some students utilize extra time for study with their tutors in their school or at home while others cannot afford this facility. However, this factor or determinant cannot be measured within the limited time and resources.

2. Review of Literature

Literature was reviewed in the following paragraphs:

2.1 Quality Criteria for Education

UNICEF (2000) described the quality criteria for education as here under:

I. Quality Learners

School systems work with the children who come into them. The quality of children's lives before beginning formal education greatly influences the kind of learners they can be. Many elements go into making a quality learner, including health, early childhood experiences and home support.

II. Quality Learning Environments

Learning can occur anywhere, but the positive learning outcomes generally sought by educational systems happen in quality learning environments. Learning environments are made up of physical, psychosocial and service delivery elements. Physical elements should include quality of school facilities, Interaction between school infrastructure and other quality dimensions and Class size. psychosocial elements include peaceful, safe environments, especially for girls, Teachers' behaviours that affect safety, effective school discipline policies, inclusive environments and non-violence. Service delivery should include provision of health services. High quality physical, psychosocial and service environments in schools set the stage for learning to occur. This learning begins with quality content.

III. Quality Content

Quality content refers to the intended and taught curriculum of schools. National goals for education, and outcome statements that translate those goals into measurable objectives, should provide the starting point for the development and implementation of curriculum (UNICEF, 2000). Curriculum should have the characteristics such as student-centered, non-discriminatory, standards-based curriculum structures and Uniqueness of local and national content. Literacy, numeracy, life skills, peace education, challenges in reaching large numbers of children with quality content should be given importance in the curriculum.

IV. Quality Processes

Until recently, much discussion of educational quality centred on system inputs, such as infrastructure and pupil-teacher ratios, and on curricular content. In recent years, however, more attention has been paid to educational processes — how teachers and administrators use inputs to frame meaningful learning experiences for students. Their work represents a key factor in ensuring quality school processes. The important points about teachers are professional learning for teachers, teacher competence and school efficiency, ongoing professional development, continuing support for student-centered learning, active, standards-based participation methods, teacher feedback mechanisms and teacher beliefs that all students can learn, teachers' working conditions. The very important notions of Supervision and support are administrative support and leadership, student access to languages used at school, using technologies to decrease rather than increase disparities and diversity of processes and facilities.

V. Quality Outcomes

The environment, content and processes that learners encounter in school lead to diverse results, some intended and others unintended. Quality learner outcomes are intentional, expected effects of the educational system. They include what children know and can do, as well as the attitudes and expectations they have for themselves and their societies. The most important points about quality outcomes are achievement in literacy and numeracy, Using formative assessment to improve achievement outcomes, outcomes sought by parents, Outcomes related to community participation, learner confidence and life-long learning, experiential approaches to achieving desired outcomes. health outcomes, life skills and

outcomes. Schools that strive for quality outcomes by bringing together the many elements of quality educational programmes exist around the world. Although there are many, the next section describes two valuable examples.

2.2 Academic Achievement

Different researchers measure academic achievement differently. Some of them develop standardized tests whereas many of them use aggregate scores of examination to measure academic achievement. However, many of them use the individual marks of subjects as academic achievement. In Pakistan and other developing countries, the scores obtained by students usually measure school performance and academic achievement. Although the use of examination scores to evaluate academic achievement is highly contested, yet it is the best available, reliable, and valid indicator that is universally acceptable in most of the developing countries (Lockheed & Hanushek, 1988). Similarly, Iida et al (2000) and Rana (2002) used the aggregate matriculation examination results and Intermediate results respectively, as academic achievement.

2.3 Prior Achievement

Academic achievement of a stage or a level of education is the prior achievement (PA) for the next stage. PA of students shows the prior ability and prior performance of students in the previous classes. This factor was not discussed in most of the previous studies. Family background and SES become a ground work for a student when a child enters the nursery class. Likewise, elementary stage is the foundation for the next stages or levels of education. If academic achievement of students at elementary education (Classes I-VIII) is better, it will provide better foundation for secondary stage. Likewise, academic achievement of secondary stage is the PA for the intermediate stage (classes XI-XII). Similarly, academic achievement of intermediate stage is PA for the degree level (Classes XIII-XIV) and higher education. Usually, aggregate scores of Class VIII are used as academic achievement of elementary education. However, there is an issue of the reliability of these scores at elementary level. Therefore, the mean of aggregate scores of three Annual Examinations of the Classes VI, VII & VIII are used as PA of students.

2.4 Review of Related Research

Prior achievement (PA) or the prior ability of students plays a very important role in the learning process. The various researchers investigated that PA or the prior ability has a significant impact on student achievement, particularly academic achievement. However, there is some variation in their findings.

Irwin, Yarbrough, Klein & Townsend (1978) investigated the relationship of family characteristics and prior ability, with school attendance and school achievement in the three rural Guatemala communities. The study concluded that school grades were predicted by pre-schooling mental test scores (prior ability) and the intellectual inspiration provided in home rather than the family SES level.

Uz & Eryilmaz (1999) also found that PA of students was a significant factor affecting the students' attitudes toward physics. The study cited Peterson & Carlson (1979) that concluded that PA resulted in positive attitudes. Uz & Eryilmaz (1999) also cited Gardner (1975) that found that PA motivated students, tend to maintain the more favorable attitudes towards physics. Likewise, Gregoire, Ashton & Algina (2001) concluded that only the prior ability and the perceived ability were the significant predictors of course grade. Similarly, Albernaz, Ferreira & Franco (2002) also concluded that SES characteristics and prior ability showed far-more robust influence.

Furthermore, Garavalia & Gredler (2002) investigated the extent to which learning strategies, PA, and aptitude of college students forecasted student achievement for a course. The study found the significant relationship of the three-predictor variables learning strategies, PA and aptitude with course achievement. The total variance in the course achievement owing to these three variables is accounted for 45%. Prior grades, Factor One of the scale (General Organization and Planning strategies) and SAT score explained the achievement significantly.

Carroll & Garavalia (2004) also contributed to this discussion. The study evaluated the relationships among various factors including prior ability in a single professional pharmacy program. Prior ability was measured by the admission data (PCAT scores, Science/Math GPA). This data were acquired from the individual databases of institutions. It was found that four variables were the significant factors varying the performance of higher and lower achievers. On the PCAT examination, low achievers acquired significantly lower scores in the subject of

Chemistry than those of the higher achievers. Furthermore, higher achievers proved to have better self-efficiency through their predictable grade. Likewise, lower achievers showed the worse attainment calibration and indicated the lower predictable grade.

Afterwards, Nascimento (2008) found positive effects of resource inputs' variation on student achievement. Likewise, according to Eryilmaz (1992) cited by Nascimento (2008), the cumulative GPA and prior achievements had strong influences on student achievement in physics.

Almost, all these studies concluded that PA or prior ability of students has a significant impact on their further achievements. Likewise, all the studies agreed that PA or prior ability is a predictor of student achievement (Gardner, 1975; Irwin, Yarbrough, Klein & Townsend, 1978; Carlson, 1979; Eryilmaz, 1992; Uz & Eryilmaz, 1999; Gregoire, Ashton & Algina, 2001; Albernaz, Ferreira & Franco, 2002; Garavalia & Gredler, 2002; Carroll & Garavalia, 2004; Nascimento, 2008). Therefore, it is concluded that PA or prior ability has a strong positive impact on academic achievement of students in the next grade.

3. Methodology

Population of the study comprised of all the 4801 secondary schools and all the secondary students in Punjab. A total of 288 secondary and higher secondary schools and 20 students from each school were the sample of the study. An instrument "Result Sheet" was developed. The study used the value-added approach. The study used the longitudinal data of academic achievement of the same students. Mean of the annual marks of the classes VI, VII & VIII (session 2003-06) was used as the prior achievement (PA) of the students. However, aggregate marks of class X (The Annual SSC Examination 2006), aggregate marks of class XII (The Annual Intermediate Examination 2008) and aggregate marks of B.A./ B.Sc (The Annual B.A./ B.Sc. Examination 2010) were used as academic achievement of the same students. The follow-up survey was conducted in the related intermediate and degree colleges to collect the aggregate marks of intermediate and degree classes. It was also found that many students did not continue the study. The data were collected personally through the result sheet. The collected data were summarized at the school level. Then the summarized data showing the between school variation were carried into the SPSS data file to analyze the data. The Stepwise Regression Analysis was used to analyze and find

out the differential impact of PA on academic achievement.

4. Results and Discussions

Academic achievement at elementary, secondary and intermediate stages and degree level were identified through the result sheet. Academic achievement at elementary level was taken as prior achievement or the prior ability for the secondary, intermediate and bachelor levels.

Table 1: Summary Statistics: Academic Achievement (Data in Percentage)

Name of the Variable		Total Sample			
		Max	Min	Mean	St Deviation
Elementary Level	Science Students	76.33	38.56	61.76	7.63
	Arts Students	73.33	35.56	54.17	7.99
Secondary Stage (Matric)	Science Students	75.85	40.32	59.53	8.02
	Arts Students	71.88	34.24	49.62	8.46
Intermediate Stage (F.A./ F.Sc.)	Science Students	67	39	54	7.36
	Arts Students	62	25	40.52	8.89
Degree Level (B.A./ B.Sc.)	Science Students	64	34	47.77	6.74
	Arts Students	58	23	37.5	7.46

Mean of the prior results of the classes VI, VII & VIII was calculated as academic achievement of elementary level from the result sheet separately for the science and arts students in their respective columns. Mean No. 1 was calculated for science students and mean No. 2 for arts students at school level. Likewise, mean of aggregate marks of The Annual SSC Examination 2006, The Annual Intermediate 2008 and The Annual B.A./ B.Sc. Examination 2010 was calculated as academic achievement of secondary, intermediate and degree level respectively and separately for science and arts students.

Figure 1: Academic Achievement of Science Students at Elementary Level, Secondary and Intermediate Stages & Bachelor Level (B.A./ B.Sc.)

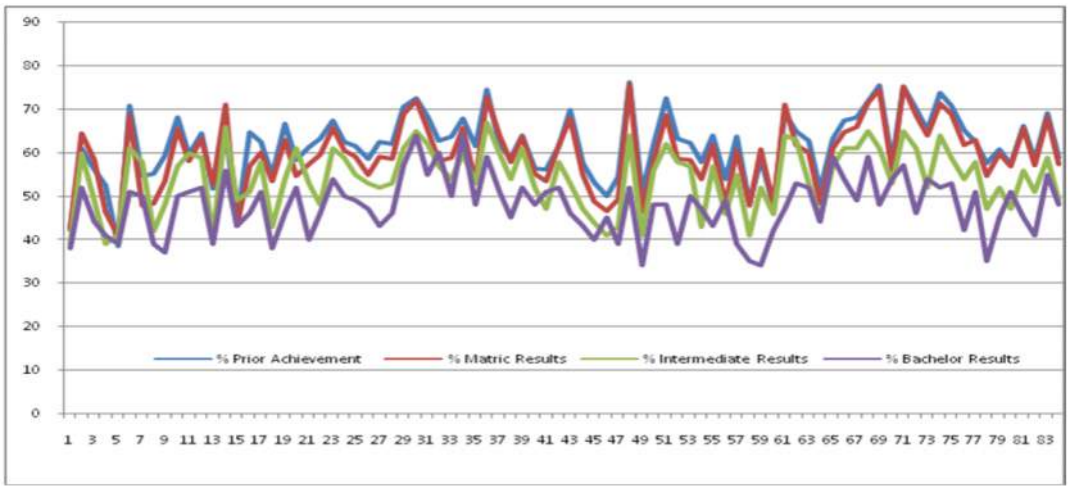

Figure 2: Academic Achievement of Arts Students at Elementary Level, Secondary and Intermediate Stages & Bachelor Level (B.A./B.Sc.)

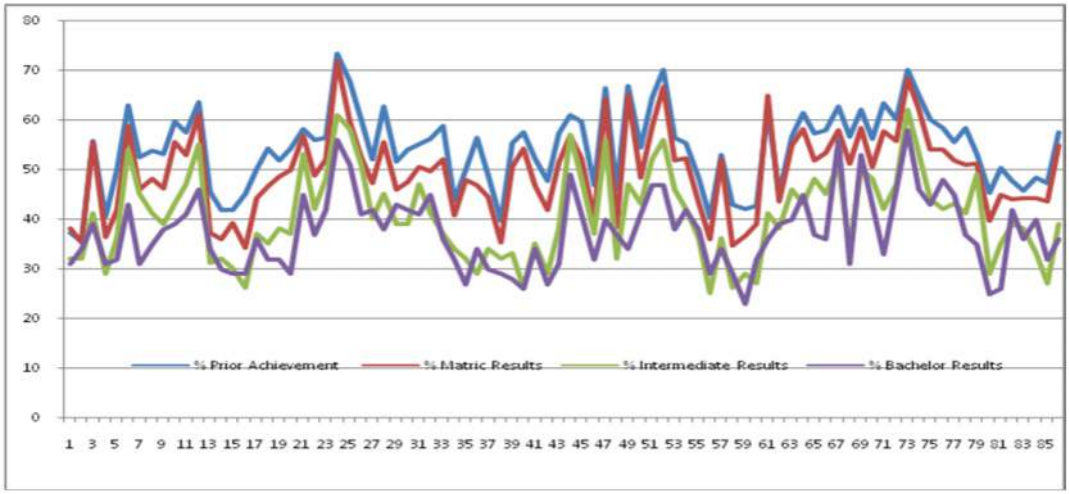

Figure 1 and figure 2 show the academic achievement of the same students at elementary level, secondary and intermediate stages and degree level. It is evident that prior achievement is consistently influencing the Matric, intermediate and degree level results. Both the Figure 1 and Figure 2 shows that there is much

variation in the academic achievement of schools; however, it is the trend line of academic achievement goes higher from the rural schools (1-48) to urban schools (49-96). Total secondary schools are 288 in the sample; however, a mean of the data for three schools were calculated. Therefore, a group of the three schools are shown a single school here in these figures. Both the figures show that there is a very strong relationship (association) between prior achievement and academic achievement.

Academic achievement is comparatively lower in the rural areas schools but higher in the urban areas schools. Actually, prior achievement of students and prior school environment are very important predictors of academic achievement. Prior achievement of students is the prior ability of students that cause for the effective and ineffective use of resource inputs. Students with the better prior achievement use resource inputs effectively and get higher academic achievement. Contrary to it, the students with the weak prior achievement have not the ability to use the resource inputs effectively; therefore, they get the lower academic achievement. Likewise, the better prior school environment attracts the students of better prior ability but the schools with weak prior school environment obtain only weak students. Usually, prior achievement of students and prior school environment are better in the overburdened schools and lower in the ineffective schools particularly the rural schools. That is why the ineffective schools particularly the rural schools produce the lower and overburdened schools produce higher academic achievement.

Table 2: The Differential Impact of Prior Achievement

Coefficients [a]			
No. of Schools: Arts Students--N = 258, Science Students--N = 252		t	Sig.
Impact of Prior Achievement on Academic Achievement at Secondary Stage	Constant Arts Students	-3.137 31.708	.002** .000**
	Constant Science Students	-1.112 28.975	.269 .000**
Impact of Prior Achievement on Academic Achievement at Intermediate Level	Constant Arts Students	-2.463 13.385	.016 .000**
	Constant Science Students	1.214 13.676	.228 .000**
Impact of Prior Achievement on Academic Achievement at Bachelor Level	Constant Arts Students	.782 8.449	.437 .000**
	Constant Science Students	3.030 6.942	.003** .000**
a. Dependent Variable: Academic Achievement			

Table 2 presents the magnitude of the differential impact of PA on academic achievement as measured by the Stepwise Regression analysis coefficient. The t-value (impact) for both types of students "arts and science" is significant. However, the positive t-value shows its positive impact.

The results of the study show that the prior achievement (PA) has positively significant relationship with academic achievement for both types of students. Likewise, PA has a significant differential impact of PA on academic achievement. It is derived that PA plays a major role in producing academic achievement and that it is a very important predictor of academic achievement. The study supports the findings of Irwin, Yarbrough, Klein & Townsend (1978), Uz & Eryilmaz (1999), Gregoire, Ashton & Algina (2001), Albernaz, Ferreira & Franco (2002), Iida et al. (2002), Garavalia & Gredler (2002), Carroll & Garavalia (2004) and Nascimento (2008) that PA is an important predictor of academic achievement.

5. Conclusions and Policy Implications

The students with higher prior achievement (PA) have the higher aptitude to learn and use the school resource inputs (SRIs) effectively; therefore, they gain the higher academic achievement. Contrary to it, the students with lower PA have not the required aptitude to learn and do not use the SRIs effectively. In this way, only the lower academic achievement is achieved. It is concluded that if students with the standard PA are admitted, they may have higher aptitude to learn and use SRIs effectively. Therefore, they gain better academic achievement.

The education system of Pakistan is not up to the standards. The prior ability or prior achievement of students, prior school environment, educational resource inputs including teachers, the whole educational process and educational outcomes, all are deficient in their standards of quality and quantity throughout the country. At the same time, there are funds constraints and mismanagement of the available educational resource inputs in the country. The educational resource inputs are misallocated, deficiently provided and inefficiently used, particularly at the elementary and secondary levels of education (Dahar, Dahar & Dahar, 2011a; Dahar & Faize, 2011). The net effect of this mismanagement, deficiently provision and inefficiently use of resource inputs is the lower level of the quality of education and the extensive wastage of educational resource inputs (Dahar, & Iqbal, 2011).

All these problems can not be solved easily. However, the implementation of step-by-step quality criteria and education standards for the prior ability or prior achievement of students, prior school environment, all the resource inputs including teachers, the whole educational process and educational outcomes can improve the quality of education. Furthermore, the implementation of quality criteria at higher education is not enough to improve the quality of education. When a student with better PA or the better ability to learn is admitted into a class, and quality criteria is implemented, the quality of education is very likely to be improved. If this process is continued from nursery to 8th class, the quality of education at secondary and higher education level must be improved. Therefore, it is recommended that the step-by-step (class-wise) quality criteria and educational standards for all these indicators of education should be developed and implemented from nursery to 8th class to ensure the quality of education at the levels of secondary and higher education. It is very likely that quality of education will be improved to a great extent at all the levels of education. The policy implication of this study is that the quality criteria described by UNICEF (2000) should be revised according to the local constraints of Pakistan and implemented from nursery class to higher education level.

References

1. Albernaz, A., Ferreira, F.H.G., & Franco, C. (2002). *Qualidade e equidade na educacao fundamental brasileira* (Working paper), Rio de Janeiro: Departamento de Economia PUC-RIO.

2. Carroll, C.A., and Garavalia. L.S. (2004). Factors Contributing to academic achievement of Pharmacy Students: Use of the Goal-Efficacy Framework. Am J Pharm Educ. *American Journal of Pharmaceutical Education 2004, 68*(4), Article 88.

3. Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., & York, R. (1966). *Equality of educational opportunity*. Washington, DC: US Government Printing Office.

4. Dahar, M.A., Dahar, R.T. & Dahar, R.A. (2011a). Deficient Level of the Availability and Inefficient Use of School Resource Inputs Leads their Wastage and the Lower Level of Student Achievement: An Issue of Resource Management. *International Journal of Finance and Economics, Issue 62* (2011), pp. 85-93, ISSN: 1450-2887.

5. Dahar, M.A., Dahar, R.T. & Dahar, R.A. (2011b). Prior Achievement is the Indicator of the Use of School Resource Inputs and the Best Indicator of Academic Achievement in Punjab (Pakistan). *Middle Eastern Finance and Economics. Issue 10* (2011), pp. 179-187, ISSN: 1450-2889.

6. Dahar, M.A., Dahar, R.A., Dahar, R.T. & Faize, F.A. (2011). Impact of Teacher Quality on the Academic Achievement of Students at Secondary Stage in Punjab (Pakistan). *European Journal of Social Sciences, Vol. 19* (1), pp. 97-105, ISSN: 1450-2267.

7. Dahar, M.A., Dahar, R.A., Iqbal, M.Z. & Faize, F.A. (2010). Impact of Per Pupil Expenditures on the Academic Achievement of Students at the Secondary Stage in Pakistan. *International Journal of Finance and Economics, Issue 52 (*2010), pp. 124-135, ISSN: 1450-2887.

8. Dahar, M.A., Dahar, R.T., Dahar, R.A. & Faize, F.A. (2011). Impact of the Prior School Environment on Academic Achievement of Students at the Secondary Stage in Punjab (Pakistan). *European Journal of Social Sciences, Vol. 19* (1), pp. 106-113, ISSN: 1450-2267.

9. Dahar, M.A., **&** Faize, F.A**.** (2011). Misallocation of Student Teacher Ratio, Class Size and Per Student Expenditure leads to the Wastage of Resources and Lower Academic Achievement: An Issue of Resource Management. *International Journal of Finance and Economics,* Issue 62 (2011), pp. 94-110, ISSN: 1450-2887.

10. Dahar, M.A., Faize, F.A., Niwaz, A., Hussain, M.A. & Zaman, A. (2010). Relationship between the Leadership Styles and Academic Achievement at the Secondary Stage in Punjab. *International Journal of Academic Research, Vol. 2*(6), pp. 459-462, ISSN-Print: 2075-4124, E-ISSN: 2075-7107.

11. Dahar, M.A., Faize, F.A., Niwaz, A. & Tahira, R. (2010). *Deficient Level of the Availability and the Use of School Resource Inputs leads to their wastage and the lower level of Student Achievement: An Issue of Resource Management*. Proceedings (published papers) of the 3rd International Conference on Assessing Quality in Higher Education ICAQHE, 2010, Modeling in Higher Education, 6th to 8th December, 2010. pp. 362-378, University of the Punjab, Lahore, Pakistan.

12. Dahar, M.A. & Iqbal, M.Z. (2011). The Extensive Wastage of Educational Resources through Misallocation among Institutions in Punjab (Pakistan): An Issue of Resource Management. Paper published in the Proceedings of the International Conference on Business and Management (ICOBM), March 28-29, 2011, pp. 459-475. Lahore: UMT School of Business and Economics, University of Management and Technology (UMT).

13. Dahar, M.A., Iqbal, M.Z. & Dahar, R.A. (2009). *Impact of Per Pupil Expenditures on the Academic Achievement of Students at the Secondary Stage in Punjab (Pakistan).* Working Paper. MPRA Paper No. 19844, posted 08, January 2010. Retrieved February 7, 2011 from: http://mpra.ub.uni-muenchen.de/19844/

14. Garavalia, L.S., & Gredler, M.E. (2002). Prior Achievement, Aptitude and Use of Learning Strategies as Predictors of College Student Achievement. *College Student Journal, Vol. 36.*

15. Government of Pakistan (2002). *Education Sectors Reforms*. Islamabad: Ministry of Education.

16. Government of Pakistan (2009). *National Education Policy 2009*. Islamabad: Ministry of Education.

17. Gregoire, M., Ashton, P., & Algina, J. (2001). *The Role of Prior and Perceived Ability in Influencing the Relationship of Goal Orientation to Cognitive Engagement and Academic Achievement*. Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA, April 10-14, 2001), Educational Resource Information Centre (ERIC). Retrieved March 14, 2009 from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/ content_storage_01/0000019b/ 80/23/12/4f.pdf

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

19. Iida, H., Tanja, K., & Roope, U. (2000). *School Resources and Student Achievement Revisited: New Evidence using Panel Data*. Helsinki: Government Institute for Economic Research (C, ISSN 0788-5016, No. 227). ISBN 951-561-325-6.

20. Irwin, M., Engle, P.L., Yarbrough, Ch., Klein, R.E., & Townsend, J. (1978). The Relationship of Prior Ability and Family Characteristics to School Attendance and School Achievement in Rural Guatemala. *Child Development 49* (2), pp. 415-427.

21. Lockheed, M., & Hanushek, E.A. (1988). Improving educational efficiency in developing countries: What do we know. *Compare, 18*(1).

22. Nascimento, P.A.M.M. (2008). School Resources and Student Achievement: Worldwide Findings and Methodological Issues. M.Sc. in Economics of Education, Institute of Education, University of London. Bahia State Department of Education (Bahia, Brazil). *Educate~ Special Issue (*March 2008), pp. 19-30.

23. Rana, R.A. (2002). *Relationship between Parents' Socioeconomic Status, Students' Self-concept and Gender, and Science-related attitudes and achievement of students at Grades 11 and 12*. A Doctoral Dissertation. Lahore: Institute of Education and Research (IER), Punjab University.

24. UNICEF (2000). Defining Quality in Education. A paper presented by UNICEF at the meeting of The International Working Group on Education Florence, Italy, June 2000. Preface of the Working Paper. Document No. UNICEF/PD/ED/00/02, p. 3. New York, NY: United Nations Children's Fund, UNICEF.

25. Uz, H., & Eryilmaz, A. (1999). Factors of Socioeconomic Status, Locus of Control, Prior \Achievement, Cumulative GPA, Future Occupation and Achievement in Mathematics on Students Attitudes towards Physics. Hacettepe Universitesi Egitim Fakiiltesi Dergisi, 16-17, pp. 105 – 112.