AEPAM Research Study No. 207

LEARNING ACHIEVEMENT

QUANTITATIVE AND QUALITATIVE DATA

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PREFACE

This is the fifth study of the series on the quantitative and qualitative aspects of primary education with a focus on learning achievement of the students. The first study assessed learning achievement at primary level whereas second and third studies investigated the factors associated with learning achievement. Hence fourth study explored quality of education with special reference to learning achievement at primary level. The present study targeted eight districts of Pakistan to find out quantitative and qualitative aspects of quality of education at primary level.

The quality of education at primary level depends upon many factors, the most important is the optimal utilization of available human and physical resources, which have direct influence on teaching learning process. Since the inception of Pakistan, different National Education Policies have been implemented and provincial governments have also been provided guidelines for the improvement of quality of education in the country. Present government introduced Education Sector Reforms with action plan emphasizes the improvement of quality of education at all levels, through revision of curricula, teacher training and provision of physical facilities in the public sector schools. These reforms intended to bring about changes in the development of education system.

This study is an effort to assess the qualitative and quantitative aspects of learning achievement and compare the performance of public and private schools regarding learning achievement of the students. The related variables such as teachers' academic and professional qualification, physical facilities, socio-economic background of the students, parental education and other related indicators that influence on students' achievement have been probed. This research provides information on the qualitative and quantitative aspects of learning and comparison between the performances of different schools were made subsequently that facilitate to determine the quality of education in public and private sector at national, provincial and district levels.

I would like to express my gratitude to Khawaja Sabir Hussain, Deputy Director (Research) AEPAM for managing, analyzing and reporting the study and thanks to data collection team including Mr. Tahir Taj, Mr. Akhtar Tatla, Mr. Muhammad Sohail Ajmal, Mr. Muhammad Siab, Research Assistants and Mr. Muhammad Akram and Mr. Muhammad Sial, Stenographers. I appreciate the services of Mr. Ikhtisar Ali, Programmer for providing assistance in data analysis. The services of Mr. Muhammad Sohail Ajmal, Research Assistant are also appreciated for typing & composing the report.

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Executive Summary

The quantitative and qualitative indicators are the major determinants of the quality of learning achievement. The focus of this document is to assess the learning achievement of grade-V students studying in both public and private schools of Pakistan. For the example eight districts from all over the country were selected based on criteria. Human Resource Index (HDI) based on as literacy ratio, enrollment, immunization ratio, infant survival ratio, real GDP per capita, educational attainment index, health index and income index of each district. On the basis of these indicators, two districts from each province (one with the highest HID indictors and one with the lowest) were selected as sample. From each district 12 primary schools (8 government and 4 private schools) were randomly selected and from each school 20 students studying in 5th class were also randomly picked for testing. The total sample of this study consisted of 1902 students (1079 boys and 823 girls). As far as rural urban ratio was concerned, 1155 urban and 747 rural students were included. Whereas 94 head teachers and 95 teachers (male 44 and female 51) were also included in the sample.

Tests based on national curricula were designed from the textbooks published by Provincial Textbook Boards for class 1-4. The tests were developed in consultation with the Provincial Governments in the subjects of Mathematics, Science and Language (Urdu). The test for each subject consisted of 25 items. The tests were administered to the randomly selected students of 5th class by the research teams of AEPAM.

The study aimed at assessing learning achievement of grade-5 students of both public and private schools in Mathematics, Science and Language (Urdu). It also aimed at identifying important factors such as teachers' attributes, availability of physical facilities in schools and socio-economic factors affecting the quality of education.

The students' average percentage scores in the above subjects were computed and compared by public and private schools and by gender and location. The average achievement scores in Science, Mathematics and Language of both public and private schools are presented as under:

Average Percentage Scores by Region/District

Districts	Mathematics			Urdu			Science		
	Public	Pvt.	Total	Public	Pvt.	Total	Public	Pvt.	Total
Hyderabad	44	52	46	57	68	61	51	63	57
Mirpur Khas	41	50	44	51	64	55	48	51	49
Haripur	40	54	42	55	74	58	51	60	52
Kohat	58	56	57	56	68	60	54	52	53
Jehlum	52	45	50	61	76	65	48	50	48
Narowal	49	51	49	64	67	65	45	48	46
Quetta	37	39	37	47	54	49	48	52	49
Ziarat	36	44	38	45	52	47	40	44	41
National	44	49	46	54	65	57	48	52	49

Pvt. = Private

1. National level the mean percentage scores in Mathematics, Urdu, and Science appeared to be 46, 57 and 49 respectively. Performance of most of the students in Mathematics and Science seemed very poor, hence most of the students performed slightly better in Urdu. The performance of private school students in most subjects was comparatively better than the public school students. Similarly the performance of rural students in Mathematics subject was comparatively better than urban students. It was interesting to note that the performance of rural and urban students'of private sector was almost the same in Mathematics whereas performance of rural student was better than that of urban students in public schools in Mathematics. The findings of this study indicated that the performance of girls' student was comparatively better than that of boys in all subjects.

2. When assessed the level of performance the findings indicated that scores of 49% students of private school in Mathematics fell in A1, A and B category whereas 44% students of public schools fell in the same category. In Urdu, the scores of 69% students of private schools fell in A1, A and B category whereas 45% students of public schools fell in the same category. In Science, the scores of 37% students of private school fell in A1, A and B category whereas 27% students of public schools fell in the same category. This data indicated better performance of private school students as compared to that of public schools. It is a matter of concern for the policy makers and planners dealing with the public sector education.

3. Inter-District difference shows that students of Kohat, Jehlum and Narowal, were the highest achievers in Mathematics whereas the students of Quetta, Ziarat and Haripur were the lowest scorers. The students of Jehlum, Narowal and Hyderabad got highest scores in Urdu whereas the students of Ziarat and Quetta got lowest scores. The students of Hyderabad, Kohat and Haripur got highest scores in Science whereas the students of Ziarat, Narowal and Jehlum got the lowest scores.

4. The study also revealed information about teachers attributes, parental attributes, and school attributes. These factors included teachers' qualification, socio-economic background of the students and availability of physical facilities in the schools. It was found that teacher's academic and professional qualification had positive impact on the students' achievement. Teachers' qualification had more influence on the performance of urban than on the rural students. Students taught by teachers having intermediate level qualification got the highest scores. It is interesting to note that as the level of academic qualification is increased, students achievements remained unaffected. As far as gender was concerned teachers academic qualification had more impact on girls students than boys. In urban areas teachers' academic qualification had more impact than in rural area.

5. It was also observed that professional qualification of teachers upto bachelor level had impact on students' achievement. The students taught by B.Ed teachers got the highest scores followed by the students taught by PTC teachers. However, the students taught by M.Ed teachers got the lowest scores. It seemed that the professional qualification of teachers up to B.Ed level had positive effect on students' achievement whereas M.Ed teachers had no impact on students' achievement at primary level.

6. The experience of teacher appears to have a positive influence on the students' achievement. However, this study revealed that teachers either in the first 5 years of their service were effective or after 10 years.

7. It was observed from the data that availability of physical facilities in a school had a significant impact on students' performance. The availability of drinking water, electricity, boundary wall, toilets, furniture, playground, and dispensary were determining factors and had positive impact on students' achievement.

8. The parental education had very positive impact on the performance of children. A consistent increase in the mean percentage scores of the students was observed with the increased in parents' education. As fathers' education increased from middle level to graduation, a consistent increase in the average percentage scores of children was noted. The level of father's education had more impact on urban students than on rural students. The level of father's education had more influence on the girls performance than that of boys.

9. A consistence increase in the mean percentage scores of students was observed with the increasing level of their mother's education. It was found that impact of mother's education was more on girls than boys. Moreover, mother's education had more influence on urban students than rural students. When compared with reference to occupation it was observed that children of government servant were the highest scorers, whereas the children of farmers were the lowest scorers. Similarly father's occupation had more impact on the performance of girls than the boys.

Salient Features

i) The overall performance of the students belonging to both public and private sectors in all subjects at national level was poor.

ii) The performance of Private school students in all the subjects comparatively was better than the public school students.

iii) Performance of rural students of both public and private schools in Mathematics was better than their counterparts in urban areas.

iv) Girls' students performance was comparatively better than the boys in all subjects.

v) Students of Kohat, Jehlum and Narowal, got the highest scores in most of the subjects whereas the students of Ziarat and Quetta achieved the lowest in most subjects, which indicated the poor performance of students belonging to these districts.

vi) Teacher's academic qualification had positive impact on the performance of students. It had more impact on urban than on rural students. Students taught by teachers having with intermediate qualification got the highest scores. On the contrary students taught by M.A teachers got the same score, which indicates that teachers with intermediate level qualification are appropriate teachers at primary level.

vii) Teacher's experience also had a positive influence on students' achievements. Students taught by teachers having 1-5 and after 11 years of experience got the highest score followed by students taught by teachers having 16 years or more experience.

viii) The availability of drinking water, electricity, and boundary wall, toilets, furniture, playground, and dispensary were determining factors and have positive impact on students' achievement.

ix) The level of parental education had positive impact on the performance of their children.

Way Forward

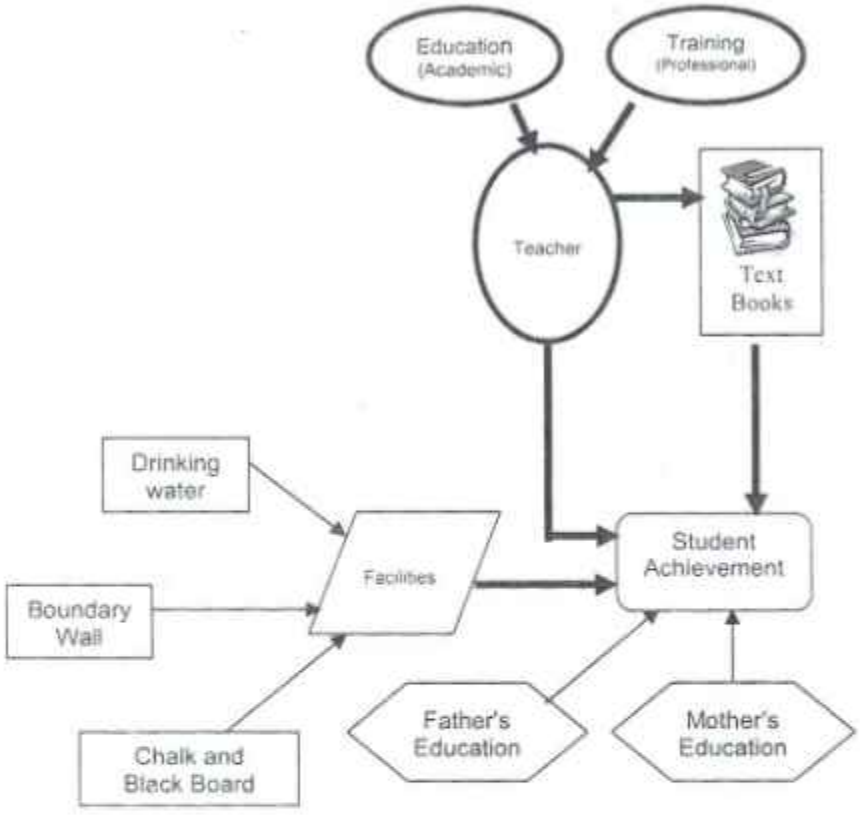
On the basis of situation analysis, the following measures are suggested for the policy makers, decision makers and educational planners.

i) Need based refresher courses for Mathematics and Science teachers may be arranged at district level to enhance the skills and knowledge in teaching of Mathematics and Science.

ii) Private sector is providing comparatively better education than public sector. It is recommended that incentives may be provided to private sector for further improvement but a monitoring mechanism for public and private schools and classroom supervision may be established at district level.

iii) Availability of physical facilities at school level has significant impact on the performance of the students. It is recommended that proper mechanism should be made at district level to enhance physical facilities in each public school.

Learning achievement is central to the teaching learning process. Teacher's education and training, socio-economic background of child and physical facilities such as drinking water, boundary wall, chalk and board play an important role in learning and have serious implications for all managers.



QUALITY OF EDUCATION:
LEARNING ACHIEVEMENT

Chapter 1

Introduction

Quantitative and qualitative database is pre-requisite to examine the quality of education at primary level. Quality of education is critical factor for poverty reduction and economic development of a country. One of the major indictors of quality education is the level of students' learning/achievement, which has been the focal point of various National Education Policies. The quality of education at primary level sets a base for the future and is dependent upon many factors which include teacher's qualifications, availability of teaching learning materials, physical facilities and socio-economic back-ground of students etc. Poor state of affairs, related to quality of education, particularly, at primary level, can make parents feel that educating children in formal public primary schools is not worthwhile. If the environment of the school particularly regarding quality of education is conducive, the enrolment increases and a greater return on investment can be expected.

In a system various inputs are required for educating primary school age children, consequently quality of outcomes is dependent on the processes and inputs. Assessment of students' achievement is a major instrument through which valuable information can be obtained to assess the quality of education. This information thus obtained helps to rationalize priorities of inputs for quality especially with regard to physical facilities in schools, learning materials, and appropriateness of teacher educating a training and revision of curricula. This is a source to provide feedback to policy makers and planners about the state of the art of education system.

Like most developing countries, Pakistan has also been confronted with the dual challenges of quantitative expansion and qualitative improvement of the education system. Quality education implies meaningful learning which is usually the result of effective schooling process. It also implies the effective and efficient use of resources. The education system in Pakistan suffers from the lacuna of shortfall between optimum resources and the reality of budgets.

The learning process starts with the arrival of the individual in this world. From the very beginning, learning takes place by imitating the elders and observing their activities at home. Most of the basic skills of life are learned at home. But these basic skills of life are not sufficient for preparing the individual to face the complexities of life. In order to socialize individual, educational institutions are established. The basic purpose of school is socialization of individual and helping in developing certain competencies in him. When a student enters in educational institution, she/he has already attained a certain level of development. On one hand every individual has some peculiar intellectual, social and emotional characteristics and on the other hand, teachers possess distinct intellectual capabilities, professional competencies and experience, which interact with each other during the education process.

School environment is the result of the interaction of teachers, students, learning materials, and activities undertaken for achieving its objectives. Consequently learning outcome is the result of a dynamic and complex interaction of a wide variety of factors. It is imperative that these factors should properly function for the quality of learning. According to Khan et al (2000) "the standard and quality of education varies from school to school". This variation is the result of inputs used by schools. There are various factors affecting the quality of education.

The purpose of this study is to identify those factors, which are considered effective in teaching and learning process. These factors include: availability of physical facilities, learning materials, teachers' academic and professional qualification, teaching experiences, as well as socio-economic background of students. This study aims at measuring the outcome of effective teaching learning process through students' achievement and exploring relationship between students' achievement and factors related to the quality of education.

1.2 Statement of the Problem

The study aimed to collect quantitative and qualitative data on learning achievement at primary level and explores the impact of teacher's education, parental education and physical facilities on student learning achievement.

1.3 Objectives of the Study

The objectives of this study were:

i) To quantify the qualitative data on learning achievement of grade-V students.

ii) Comparative analysis of students' achievement with reference to education indicators such as: teachers' qualifications, parental qualification by gender and location.

iii) To analyze the development in the light of previous learning achievement studies.

iv) To suggest viable measures for policy formulation.

1.4 Significance of the study

This study has immense importance for the policy-makers, and planners because it identified the factors that affect the quality of education at primary level. District managers may get help to understand problems which are being faced in providing primary education.

Moreover, the findings of this study may be helpful for head teachers and teachers who are having direct interaction with students. The findings will help them to get insight about the factors affecting learning.

The research findings and recommendations will provide strategic guidance to curriculum designers and developers in producing a balanced curriculum for the development of balanced personality of the children. This study may be useful for the parents of the students to understand the impact of socio-economic background on students' achievement.

1.5 Delimitations of the study

i) Keeping in view the limited time and resources constraints, the study was delimited to only eight districts of Pakistan.

ii) The study was further delimited to primary level, the achievement tests were administered to class-5 children only.

iii) 12 schools (8 governments and 4 private) and twenty students from each school were randomly selected.

Chapter 2

Review of Literature

Various research studies have been conducted on students' learning achievement in Pakistan at primary level by various organizations but very few studies have tried to identify the factors affecting the quality of education. These studies indicated low level of students' learning/achievement at primary level in Pakistan particularly in Mathematics.

Shah (1984 pp.211) reported an average percentage score of 38 in Mathematics of grade-V students and average percentage score of 38 in Science of grade IV students. The Bridges study on "Teacher Characteristics and Students' Achievement in Mathematics and Science, reported as the average (mean) score of 11.7 for Mathematics IV, 12.4 average score for Mathematics V, average score of 13.8 for Science IV and average score of 16.3 for Science V (Warwick and Rimers, 1989, pp.3).

Rugh et al (1991) found the mean percentage score of 21 for Mathematics, and 30 for science. Rugh's study indicated a decline in achievement score for Mathematics from 35 percent in 1984 to 21 percent in 1989 (Rugh et al, 1991, pp.11).

The Harvard study (1992) on "Teacher Certification: Value Added or Money Wasted" reported that the teacher's formal education and experience had a positive effect on the achievement of students in science and Mathematics. While teachers' certification did not improve the classroom practices (Warwick and Rimers, 1992, pp.27-28).

Warwick and Rimers (1992), in another research, reported that teachers' qualification and subject knowledge had strong correlation with students' achievement. Teachers own subject knowledge and formal education had more impact on students' performance than did their pre-service training (Warwick and Rimers, 1992).

A national survey carried out by MSU (1995) to identify "Determinants of Primary Students Achievements reported students' achievement of an average percentage score of 46 in Mathematics, 74 in general knowledge and 69 in comprehension. This study reported an improvement of 25 percent points during 1989-1995 in Mathematics. In addition, boys' performance was better than the girls in Mathematics by scoring three percent higher points (MSU-SAP, 1995).

Action Aid Pakistan Survey (1999) reported achievement of average percent score of 60 in Mathematics, 67 in Urdu and 71 in the general knowledge of students of public schools. It also indicated better performance of boys over girls (Education For All-The Year 2000 Assessment, Pakistan Country Report, 2000, pp.44-45).

AEPAM (2000) study entitled "Measuring Learning Achievement at Primary level in Pakistan" reported that overall average scores of students for both Science and Urdu was 72 whereas for Mathematics, it was 58 of grade V students. (Khan et al, 2000, p.14).

AEPAM (2002) study entitled "Factors Associated with Learning Achievement of Grade V Students in Public Schools," reported that mean percentage score in Mathematics was 48, whereas for Urdu it was 60 and 65 for Science of grade V students. The same study reported that teachers' academic and professional qualification had a positive impact on students' achievement. (Khan & Shah., 2000, pp.38-44).

Farooq. (2003) Study on "The impact of teachers' characteristics on learning achievement of students at primary level in Rawalpindi district," reported that the total mean percentage score of students in Mathematics was 54 and in sciences it was 64. The study further indicated mean percentage score of 51 in Mathematics for boys and 58 for girls. The mean percentage score in science was 59 for boys and 66 for girls (Farooq, 2003, pp.3).

Haq (1998) quoted the findings of various studies on learning/achievements that indicated a very low level of students' learning/achievement. He particularly stated the low achievement of basic competencies of children in a nation wide sample of 11 to 12 year old primary school completers, such as, 34 percent could read with comprehension and 17 percent could write a letter. Another study reported by Haq, indicated that less than 10 percent of the representative sample were competent in basic reading and comprehension (Haq, M., & Haq, K., 1998,pp.77)

Education Ability Test grades 4,5 and 6 consisting of 50 items for Language, Mathematics, Science & General Information, and Reasoning was developed by National Institute of Psychology (NIP), Quad-I-Azam University, Islamabad. The aim was to evaluate students' cognitive educational outcomes. The test items were constructed keeping in view the curriculum and textbooks of grade 4, 5, 6 and 7. The test was developed for students of grades 4,5, and 6. The mean scores for complete test for students of grades 4,5, and 6 were 24.32,27.55 and 36.17 respectively. The overall increase in the mean scores between various grades was significant. (Ansari Z.A, P.N.Tariq & M.Iftikhar, 1990 pp.7-11).

Ayub (2001) conducted a study on "measuring students achievement in relation to parent involvement." This research indicated that parents' involvement in the educational activities of their children had a positive impact on their achievement. It also found that parents and family environment are important factors responsible for improving the achievement level of students in schools (Ayub 2001, pp.60).

Habib et.al (2004) conducted a study on Comparing School performance to understand which schools were doing better by Assessing and comparing quality of education. The conclusions of this study were as under:

1. The performance of most of students of both sectors in Mathematics was poor whereas most of the students performed well in Urdu and Science tests at national level.

2. The performance of Private school students in most subjects was better than that of Public school students. Similarly performance of urban students in all subjects was better than that of rural students.

3. Girl students' performance was significantly better than their boys counter-parts in all subjects including Mathematics.

4. In private schools, 82% students scored A1, A and B grades in Urdu whereas 58% students of Public schools scored the same grades which indicated the outstanding performance of Private school students as compared to that of Public school students.

5. Students of FR Kohat, Bhakkar, D.I. Khan, Multan, Khairpur got the highest scores in most of the subjects whereas the students of Khyber Agency and Khuzdar achieved lowest in most subjects, which indicated the poor performance of students belonging to these districts.

6. Teachers' academic qualification had positive impact on the performance of students. It had more impact on urban than rural students. Students taught by matriculate teachers and holding M.A degree got the highest scores.

7. Teachers' professional qualification had significant effect on students' achievement. Students taught by teachers having certificate in teaching (C.T.) and M.Ed degree achieved highest scores.

8. Teachers' experience also had a positive influence on students' achievement. Students taught by teachers having 1-5 years of experience got the highest score followed by students taught by teachers having 16 years or more experience.

9. The availability of drinking water, electricity, boundary wall, toilets, furniture, playground, and dispensary had positive also impact on students' achievement.

10. The level of parental education particularly mother's education had a significant impact on the performance of their children.

Sharni.et.al (2005) conducted study on Quality of Education learning Achievement at Primary Level. The conclusions of the study were:

1) It was concluded that the performance of most of students of both sectors in all subjects was poor in general and particularly in mathematics at national level.

2) The performance of Private school students in most subjects was better than Public school students. Similarly performance of urban students in all subjects was better than that of rural students.

3) Boys students' performance was significantly better than their girls counter-parts in all subjects. In private schools 39% student got A1, A and B grades in mathematics. Whereas only 30% students of public schools scored the same grades.

4) In private schools, 60% students scored A1, A and B grades in Urdu whereas 52% students of Public schools scored the same grades. Similarly in science the performance of private school students' was better than that of public schools

5) Students of Bhakkar, Islamabad, Multan, got the highest scores in most of the subjects whereas the students of Thatta and Kohistan achieved lowest in most subjects which indicated the poor performance of students belonging to these districts.

6) Teacher's academic qualification had positive impact on the performance of students. It had more impact on urban than on rural students. Students taught by teachers holding Matric or M.A degree got the highest scores.

7) Teacher's experience also had a positive influence on students' achievements. Students taught by teachers having 1-5 years of experience got the highest score followed by students taught by teachers having 16 years or more experience.

8) The availability of drinking water, electricity, and boundary wall, toilets, furniture, playground, and dispensary were determining factors and have positive impact on students' achievement.

9) The level of parental education had a significant impact on the performance of their children.

National Education Policy (1992) stated that the quality aspects of education have been compromised because of rapid expansion of the primary education. This calls for an urgent review of the measures needed for raising the quality of education in Pakistan. The policy proposed various measures such as training of teachers, provision of teaching kits to primary schools, special federal funds for improvement of the physical facilities and the gradual increase in the number of primary teachers. (National Education Policy, 1992, pp. 16-19)

National Education Policy (1998-2010) has emphasized on the quality of education. The policy proposes that a system of continuous evaluation should be adopted at the elementary level to ensure attainment of minimum learning competencies. It also proposes raising the minimum educational qualification of primary teachers from Matric to intermediate level and revising contents and methodology of teachers' education curricula (p. 2-3). The policy further proposes the following steps to improve the quality of education.

- To ensure achievement of minimum level of learning up to 90 percent primary education by the year 2010.
- To meet the basic learning needs of the child in terms of essential learning tools as well as the basic learning contents.
- Teachers' competence shall be improved and the relevance of training programmes for teachers shall be ensured.
- A monitoring system shall be developed to obtain timely and reliable information on enrolment, retention, completion and achievement. The qualitative monitoring of achievement shall also be introduced. (p. 28-29).

Chapter 3

Methodology

This chapter describes methods and procedures adopted for conducting this study Quantitative and Qualitative methodology was adopted. The study was designed to compare school performance on the basis of students' achievement and exploring the in-school and out-school factors affecting learning of students at primary level. The in-school factors include head teachers/teachers, teaching & learning materials and physical facilities in the schools. The out- school factors include socio-economic background of the children that has direct impact on the performance of the students.

3.1 Population

The focus of the study was to measure the learning achievement of students at primary level in Pakistan. All children studying in class/grade V in both government and private schools in Pakistan served as population.

3.2 Procedure for Selection of Sample

The major task for conducting of this study was to select sample districts, which should be true representative at national level. For selection of the districts, criteria were developed. UNDP calculated HDI indictors such as literacy ratio, enrollment, immunization ratio, infant survival ratio, real GDP per capita, educational attainment index, health index and income index. On the basis of these indicators, eight districts (two from each province one with the highest HID indicators and one with lowest) were selected as sample of the study.

3.3 Sample Selection / Sample Size

According to Best and Kahn (1996) "the sample should represent the population. There is no fixed number or percentage of subjects that determines the size of an adequate sample". Serious efforts were made to select a sample of reasonable size representing students of grade-V by gender and location. From the eight sample districts, 96 schools were randomly selected. From each selected district, 12 primary schools (8 public and 4 private) were randomly selected. Twenty students were randomly selected from each school to administer the tests. The total number of students of class-5 at primary level was 1902 to whom the achievement tests in Mathematics, Science and Urdu were administered. Relevant information had also been collected from 94 head teachers and 95 teachers (44 Male and 51 female) of class-5. The distribution of sample was as given below:

District	School	Location		Type of School		Gender		Head Teacher	Teacher
		Urban	Rural	Public	Private	Boys	Girls		
Hyderabad	12	120	117	157	80	139	98	11	12
Mirpur Khas	12	159	80	160	79	114	125	12	12
Haripur	12	177	59	198	38	117	119	12	12
Kohat	12	133	102	156	79	161	74	11	11
Jehlum	12	159	80	180	59	122	117	12	12
Narowal	12	101	141	161	81	110	132	12	12
Quetta	12	157	81	160	78	152	86	12	12
Ziarat	12	149	87	176	60	164	72	12	12
Total	**96**	**1155**	**747**	**1348**	**554**	**1079**	**823**	94	95

3.4 Development of Learning / Achievement Tests

The development of learning/achievement tests of Mathematics, Science and Urdu was the major task for conducting this study. Therefore, special efforts were made to develop substantially reliable and valid national tests in the said subjects in view of primary curriculum and the textbooks published by various provincial Text Book Boards. Item-banks based on the national primary curricula and textbooks published by various provincial Text Book Boards were developed. With the help of item-banks, test items were designed.

3.5 Research Instruments

The following research instruments were developed for data collection:

i) Basic Information Sheet (questionnaire) about the students in order to get information in respect of socio-economic factors.

ii) Achievement tests in Mathematics, Science (both in Urdu and English) and Urdu language were developed in consultation with provincial governments. The test for each subject consisted of 25 items.

iii) Questionnaires for teachers/head teachers were designed to get relevant information.

3.6 Pilot Testing of Research Instruments

Pilot testing of achievement tests was made in six government and private primary schools in Islamabad and Rawalpindi. Before pilot testing 35 multiple-choice questions for each test were developed. The pilot tested questionnaires were coded and

item analysis was carried out. These tests were re-tested by conducting item analysis for each item. The difficulty level and diserimination level of each item for all the three tests were calculated and finally the items with standard discrimination level were retained. Every possible effort was made to arrange the test items according to difficulty level. In this way only 25 multiple-choice questions for each subject were finalized.

3.7 Procedure of Data Collection

The data were collected by the AEPAM data collection teams. The teams visited each sample school for administering the achievement tests to the students of class-5. The team also conducted interviews with the teachers of class-5 and with head teachers of the sample school. Every effort was made by the research team to collect valid and reliable data for the study.

3.8 Data Coding and Entry

Key for data coding and data entry for each test was prepared. The test papers were coded and data were fed in the computer. MS Access data base package was used for data entry. After the data entry, it was cross checked and reviewed for further analysis.

3.9 Data Analysis

Data were subjected to various statistical treatments by using Statistical Package for Social Sciences (SPSS) to work out the overall average score in each subject at national and provincial levels by gender and location. The comparison in scores of students of private and public schools for each subject was also carried out. In order to establish relationship between dependent variable i.e achievement scores and independent variables i.e. physical facilities, teachers' academic and professional qualification, experience and socio-economic factors. Various statistical tests were used to establish relationship between dependent and independent variables.

3.10 Results, Conclusions and Recommendations

On the basis of data analysis, results were framed which have been presented in the next chapter. On the basis of the results of the study, conclusions were drawn and recommendations were formulated.

Chapter 4

4. Presentation of Achievement Scores

The score of the students' achievement have been arranged according to the objectives of the study. Every possible effort has been made to present the scores in comprehensive manner. The achievement of the students were graded i.e. A1, A, B, C and D. Those students, who obtained marks below 33%, were considered fail. Descriptive statistics such as mean and standard deviation were used for analysis. Moreover, inferential statistics such as t test was applied for significance of mean and correlation between students' achievement and teachers' qualification. Impact of parental education and physical facilities was also examined. The data have been reported by inter-district/province, gender wise and location wise pattern.

4.1 Performance of Students in Mathematics Test at National Level

Table-1

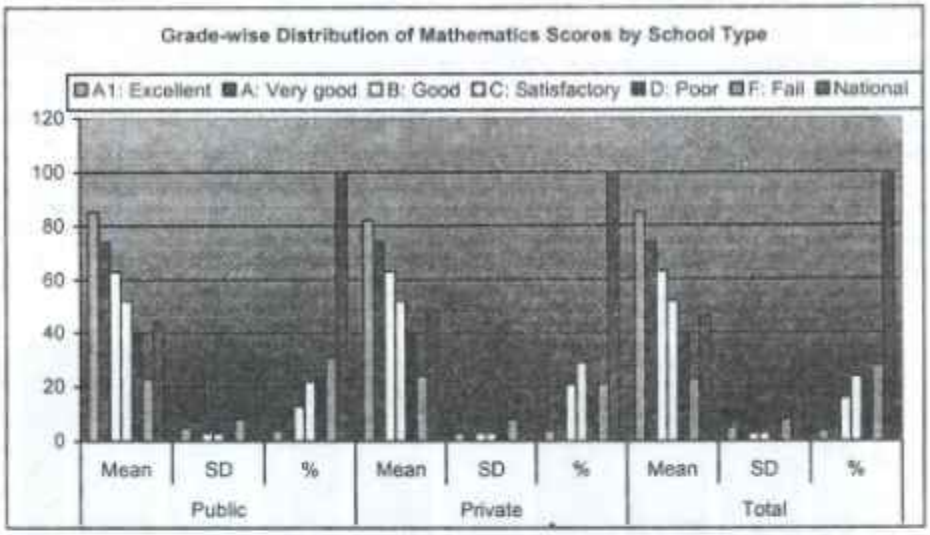
Grade-wise Distribution of Mathematics Scores by School Type

Grade	Public			Private			Total		
	Mean	SD	%	Mean	SD	%	Mean	SD	%
A1: Excellent	85	5	4	82	3	4	85	5	4
A: Very good	74	2	6	74	2	7	74	2	6
B: Good	63	3	13	63	3	21	63	3	16
C: Satisfactory	52	3	22	52	3	29	52	3	24
D: Poor	40	3	23	40	4	19	40	3	22
F: Fail	23	8	31	24	8	21	23	8	28
National	44	19	100	49	17	100	46	19	100

It was observed that the mean percentage score in Mathematics at national was 46 (46% questions correctly answered). Data show that half of the students did not qualify the test and they got either grade D or failed. This indicates that majority of students lack the basic competency in Mathematics. Comparing the data of public and private sectors it was observed that the score of 32% of private sector fell in category A1, A and B, whereas 23% students of public sector achieved the same grades.

The above table also shows that mean percentage scores (49) of private schools' students was higher than that of students of public schools (44). A significant difference was observed between the performance of private and public schools' students. Further detail is presented in graph-1.

Graph - 1



4.2 Inter-District Differences in Mathematics Test

Table- 2

Average Percentage Score by Region/District

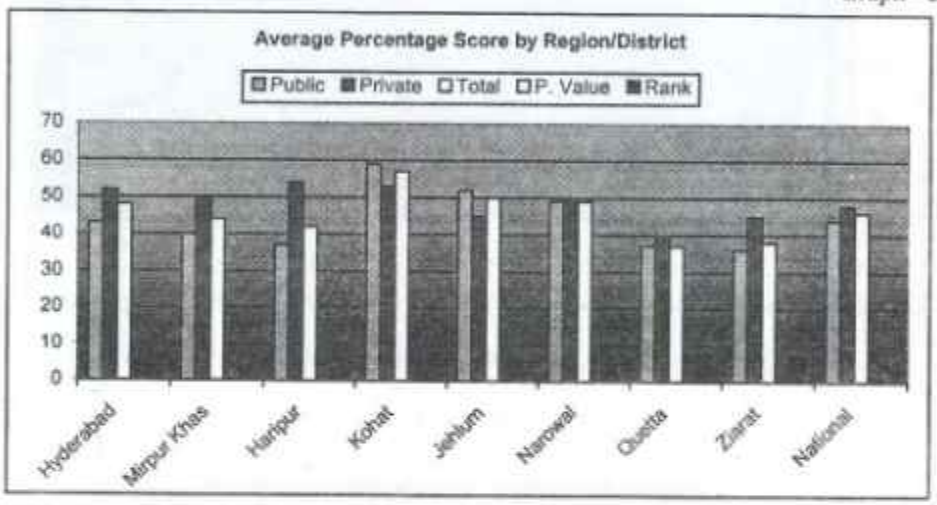
District	Public	Private	Total	P. Value	Rank
Hyderabad	44	52	46	0.000	4
Mirpur Khas	41	50	44	0.000	5
Haripur	40	54	42	0.000	6
Kohat	58	56	57	0.335	1
Jehlum	52	45	50	0.036	2
Narowal	49	51	49	0.545	3
Quetta	37	39	37	0.323	8
Ziarat	36	44	38	0.000	7
National	44	49	46	0.000	-

- ✓ The district where $P<0.05$ is declared having significant difference between private and public schools.
- ✓ Ranking of district has been given according to total mean percentage score.

The results given in table-2 show that there was no significant difference in the performance of public and private school students in the districts of Narowal, Kohat and Quetta. However, significant difference in the performance of students of public

and private schools was found in districts of Hyderabad, Mirpur Khas, Haripur, Jehlum and Ziarat. Ranking of districts with respect to students' achievement in Mathematics showed that students of Kohat achieved the highest average scores followed by students of Jehlum and Narowal. The students of (public schools) Ziarat district got the lowest average percent score i.e. 38%. Whereas students of private schools in Quetta got the lowest score. The graph is below:

Graph - 2



4.3 Students' Achievement by Area in Public and Private Sector

The rural and urban differences show the level of quality of education by location and type of schools. The achievements have also been treated separately for public and private sector schools, which are given in table-3.

Table-3

Student's Achievements			
Location	**Public**	Private	P- Value
Urban	43	48	0.000
Rural	46	49	0.044
P. Value	0.008	0.613	------

The table-3 mentions that performance of students in private schools was almost same in rural and urban areas, whereas performance of rural students was better than that of urban students in public schools, and difference of mean score was significant. In urban as well as rural areas the students of private schools out performed

their counterparts in public schools. Further, details of the data of each district are given in table-4.

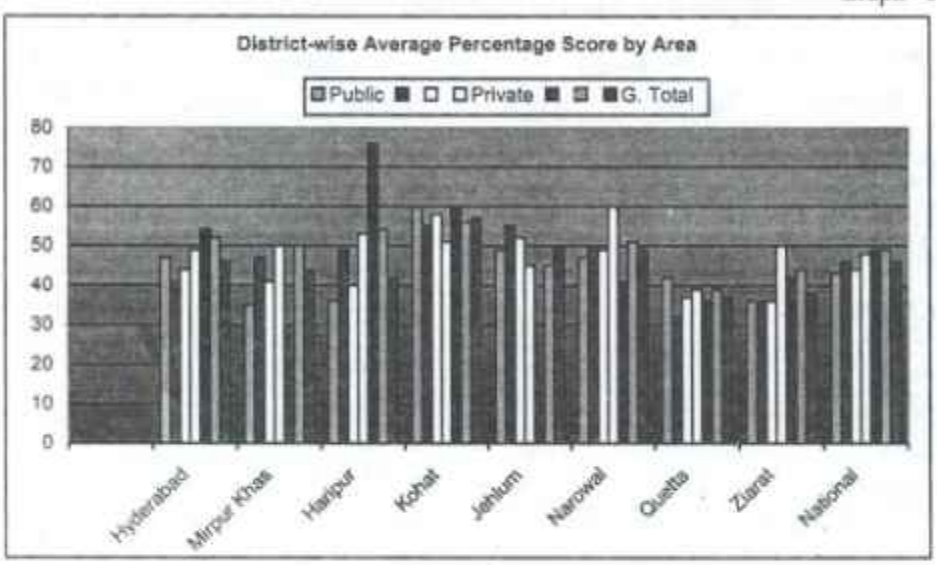
Table-4

District-wise Average Percentage Score by Area

Districts	Public			Private			G. Total
	Urban	Rural	Mean	Urban	Rural	Mean	
Hyderabad	47	41	44	49	54	52	46
Mirpur Khas	35	47	41	50	.	50	44
Haripur	36	49	40	53	76	54	42
Kohat	60	55	58	51	60	56	57
Jehlum	49	55	52	45	.	45	50
Narowal	47	50	49	60	41	51	49
Quetta	42	32	37	39	36	39	37
Ziarat	36	36	36	50	42	44	38
National	43	46	44	48	49	49	46

Inter-district differences with respect to location and type of school are presented in table-4. District wise differences of public schools by location indicate that students of public schools in rural areas of Mirpur Khas, Haripur, Narowal and Jehlum scored higher than their counterparts in urban schools. On the contrary, students of private schools in rural areas of Hyderabad, Haripur and Kohat outperformed their counterparts in urban schools.

Graph –3



4.4 Gender Differences in Students' Performance in Mathematics Test

The gender-wise differences in private and public sector and by school location have been presented in table-5.

Table-5

Gender	Public		Private	
	Urban	Rural	Urban	Rural
	Mean	Mean	Mean	Mean
Boys	42	44	48	46
Girls	44	48	52	53
P. Value	0.106	0.029	0.101	0.000

The performance of urban girls students of private schools was better than their boys counterparts. But difference of mean score was not significant on the same was rural girls out performed their rural boys counterparts and difference was significant. In urban areas the performance of girls students was better than boys in public sector. However difference was not significant. District wise detail is presented in table-6.

Table-6

District-wise Average Percentage Score by Gender

Districts	Public						Private						G. Total
	Urban			Rural			Urban			Rural			
	B	G	T	B	G	T	B	G	T	B	G	T	
Hyderabad	45	49	47	45	37	41	49	.	49	50	58	54	46
Mirpur Khas	34	35	35	52	42	47	47	52	50	.	.	.	44
Haripur	28	42	36	46	55	49	52	54	53	.	76	76	42
Kohat	59	62	60	63	37	55	49	68	51	60	61	60	57
Jehlum	45	53	49	36	74	55	41	52	45	.	.	.	50
Narowal	62	40	47	41	64	50	60	60	60	35	44	41	49
Quetta	39	44	42	33	30	32	39	37	39	.	36	36	37
Ziarat	38	30	36	31	38	36	50	48	50	42	41	42	38
National	42	44	43	44	48	46	46	53	48	48	52	49	46

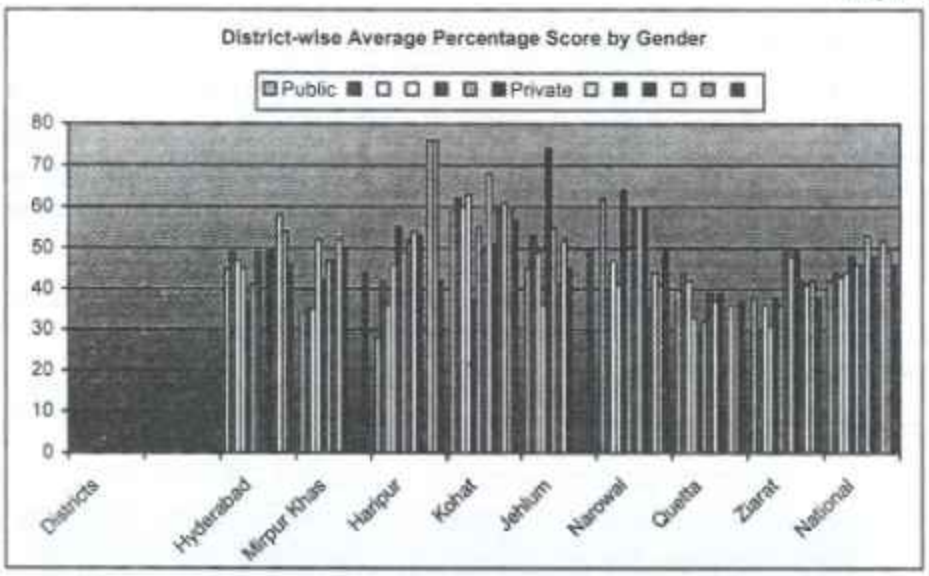
B = Boys, G = Girls, T = Total

Table-6 depicts that only urban boys students of public sector performed better than girls students in only district of Narowal. Whereas in urban area girls students of public sector performed better than their boys counterpart in all other districts. In the same was in rural area of public schools, girls students out scored their counterpart in district Haripur, Jehlum, Narowal and Ziarat. The rural students of public schools of Quetta district got the lowest score i.e. 30.

As far as private sector was concerned, girls students of urban areas showed better performance in districts of Mirpur Khas, Haripur, Kohat and Jehlum. In rural areas the performance of boys students was better than girls students, except in Jehlum and Ziarat.

The above table also shows that there were no schools functioning in urban area of Hyderabad in private. On the contrary in Mirpur Khas and Jehlum, no school was functioning in rural areas in private sector, at the time of data collection. Therefore no comparison has been made.

Graph - 4



4.5 Performance of Students in Urdu Test

The performances in Urdu test are presented in the following table.

Table-7

Grade-wise Distribution of Urdu Score by School Type

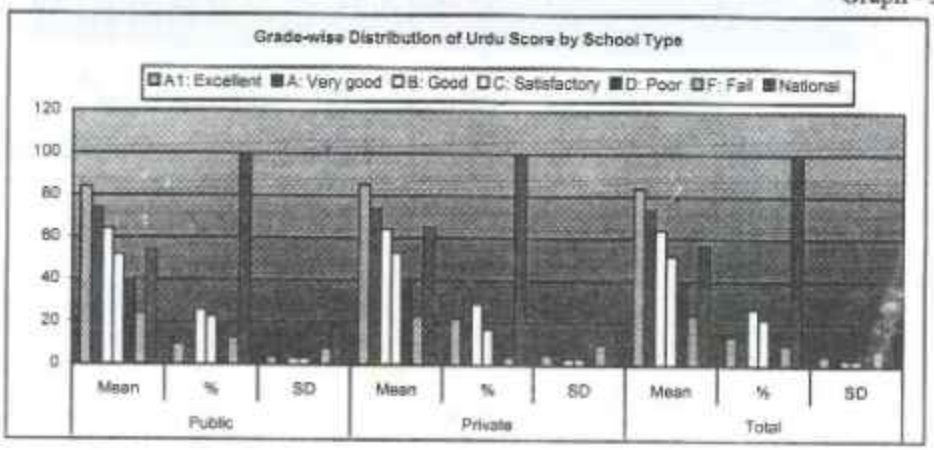
Grade	Public			Private			Total		
	Mean	SD	%	Mean	SD	%	Mean	SD	%
A1: Excellent	84	4	10	85	5	22	84	5	14
A: Very good	74	2	9	74	2	18	74	2	12
B: Good	64	3	26	64	3	29	64	3	27
C: Satisfactory	52	3	23	53	3	17	52	3	22
D: Poor	40	3	19	41	3	10	40	3	16
F: Fail	24	8	13	23	10	4	24	8	10
National	54	18	100	65	16	100	57	18	100

M= Mean, %=Percentage, SD=Standard Deviation

The table-7 indicates that the mean percentage score in Urdu at National level was 57 (57% questions correctly answered). The data show that 53% students of both public and private schools obtained A1, A and B grades, and 38% students got C and D grades whereas 10% were unable to pass the test. Comparing the data of public and private sectors it was observed that the score of 69% of private sector fell in category A1, A and B, whereas 45% students of public sector achieved the same grades.

The average percentage score of private school students was 65 and 54 for the students of public schools. A significant difference was observed in the performance of public and private school students.

Graph - 5



4.6 Inter-District Differences in Urdu Test

Table-8

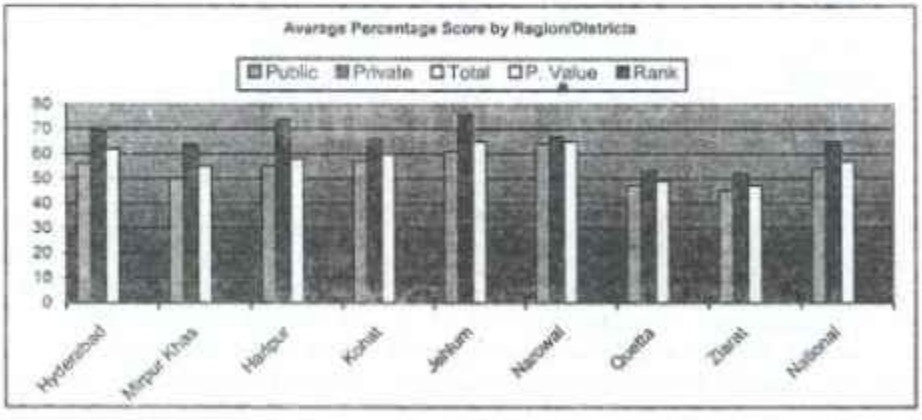
Average Percentage Score by Region/Districts

Urdu					
Score	**Public**	**Private**	**Total**	**P. Value**	**Rank**
Hyderabad	57	68	61	0.000	2
Mirpur Khas	51	64	55	0.000	5
Haripur	55	74	58	0.000	4
Kohat	56	68	60	0.000	3
Jehlum	61	76	65	0.000	1.5
Narowal	64	67	65	0.263	1.5
Quetta	47	54	49	0.001	6
Ziarat	45	52	47	0.008	7
National	54	65	57	0.000	-

→ Ranking of district has been given according to total mean percentage score.

It was observed that students of Jehlum and Narowal got the highest average percent score i.e. 65% (both public and private schools) followed by the students of Hyderabad whereas the students of Ziarat were the lowest achievers in Urdu. In most of districts the performance of the private school students was better than that of public school students. In most districts a significant difference was observed between the performance of public and private schools except Narowal.

Graph - 6



4.7 Students' Achievement by Area in Public and Private schools in Urdu Test

The rural and urban differences showed disparity at regional level and in level of quality of education. Students' achievement has been calculated area-wise. The scores are presented in table-9.

Table-9

Location	Public	Private	P. Value
Urban	55	66	0.000
Rural	54	61	0.000
P. Value	0.138	0.001	-----

Table-9 indicates that urban students of private schools performed better than the urban students of public schools and difference of score was significant. Similarly the rural students of private schools outscored their rural counterparts of public schools and the difference was significant. The performance of urban student of public students was better than that of rural counterparts and the difference was not significant. Similarly urban students of private schools outscored their rural counterparts and difference was significant. District-wise details are given in table-10.

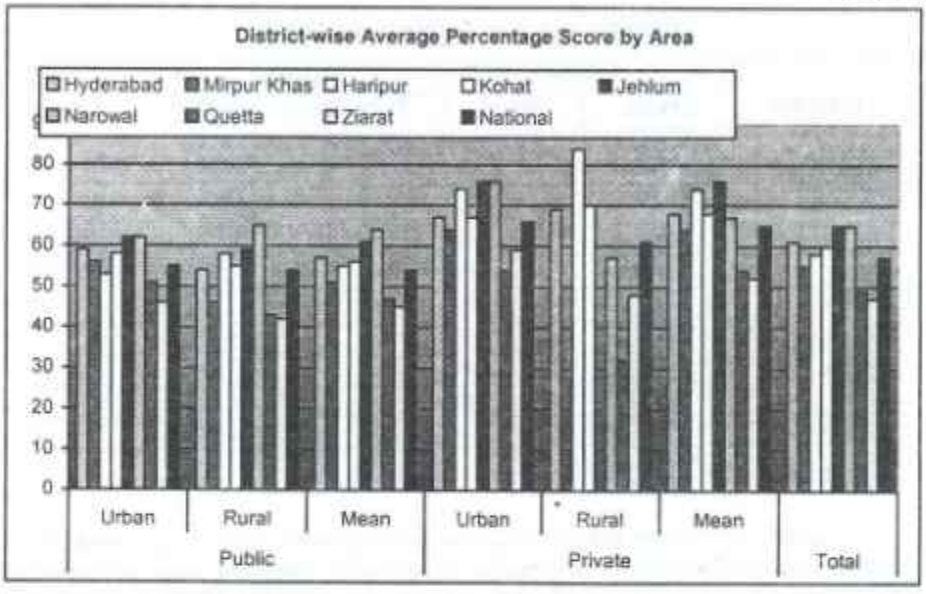
Table-10

District-wise Average Percentage Score by Area

District	Public			Private			Total
	Urban	Rural	Mean	Urban	Rural	Mean	
Hyderabad	59	54	57	67	69	68	61
Mirpur Khas	56	46	51	64	.	64	55
Haripur	53	58	55	74	84	74	58
Kohat	58	55	56	67	70	68	60
Jehlum	62	59	61	76	.	76	65
Narowal	62	65	64	76	57	67	65
Quetta	51	43	47	54	32	54	49
Ziarat	46	42	45	59	48	52	47
National	55	54	54	66	61	65	57

Table-10 mentions inter-district differences with respect to location and type of the schools. The data show that students of public schools in urban areas of Hyderabad, Mirpur Khas, Kohat, Jehlum, Quetta and Ziarat performed better than their rural counterparts. Similarly, students of private schools in rural areas of only Hyderabad, Haripur and Kohat scored higher than their urban counterparts. In all other districts, students of urban areas of private sector outscored their rural counterparts.

Graph - 7



4.8 Students' Performance in Urdu by Gender

The students' scores of both sectors by gender and location are reported in table-11.

Table-11

Gender	Public		Private	
	Urban	Rural	Urban	Rural
	Mean	Mean	Mean	Mean
Boys	51	53	64	60
Girls	60	54	72	63
P. Value	0.000	0.411	0.000	0.185

It was observed that girls students of both sectors in both urban and rural areas performed better than their boys counterparts. As far as public sector was concerned girls of public sector outscored their boys counterparts in both rural and urban area, and the difference was significant in urban area. The performance of girls' students of private school was better than their rural counterpart. District wise data are shown in table-12.

Table-12

District-wise Average Score by Gender

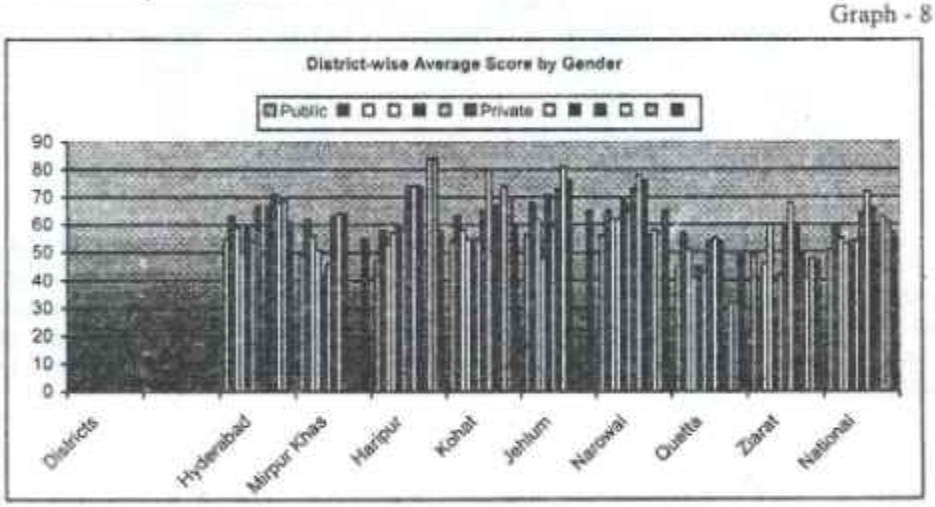
Districts	Public						Private						G. Total
	Urban			Rural			Urban			Rural			
	B	G	T	B	G	T	B	G	T	B	G	T	
Hyderabad	55	63	59	50	59	54	67	.	67	71	68	69	61
Mirpur Khas	49	62	56	51	42	46	63	64	64	.	.	.	55
Haripur	47	58	53	57	59	58	74	74	74	.	84	84	58
Kohat	54	63	58	55	54	55	65	80	67	67	74	70	60
Jehlum	56	68	62	48	71	59	73	81	76	.	.	.	65
Narowal	56	65	62	62	70	65	73	78	76	56	58	57	65
Quetta	45	57	51	41	45	43	54	55	54	.	32	32	49
Ziarat	49	37	46	60	33	42	59	68	59	49	41	48	47
National	51	60	55	53	54	54	64	72	66	60	63	61	57

B = Boys, **G** = Girls, **T** = Total

Table-12 illustrates that urban girl students of public schools performed better than their boys counterparts in all districts except Ziarat. Similarly rural girls of public sector in districts of Hyderabad, Haripur, Jehlum, Narowal and Quetta outscored their boys counterparts.

It is also evident from the above table that urban girls students of private schools performed better than boys students in districts of Mirpur Khas, Kohat, Jehlum, Narowal, Quetta and Ziarat. Similarly rural girls students of private sector outperformed their boys counterparts in district Kohat and Narowal. Data further shows that there was not private school functioning at the time of data collection in rural area of district Mirpur Khas, and Jehlum.

Graph - 8



4.9 Performance of Students in Science Test

The scores of science test are presented in the following tables.

Table-13

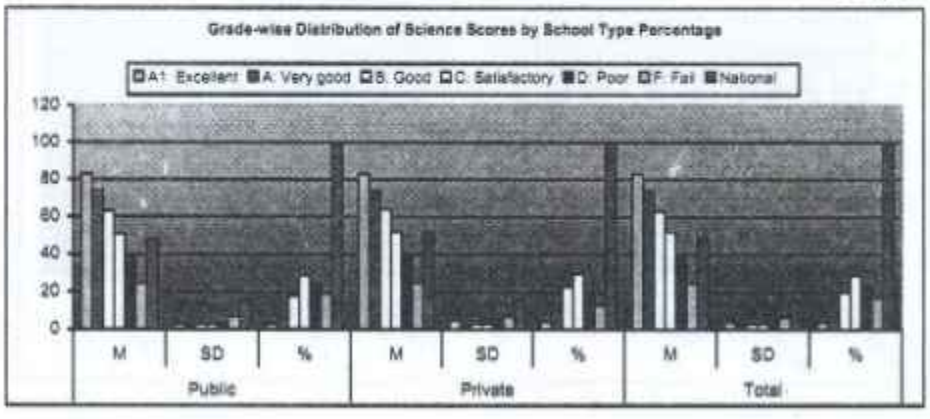
Grade-wise Distribution of Science Scores by School Type Percentage

Grade	Public			Private			Total		
	M	SD	%	M	SD	%	M	SD	%
A1: Excellent	83	3	3	83	5	4	83	4	4
A: Very good	74	2	6	74	2	10	74	2	7
B: Good	63	3	18	64	3	23	63	3	20
C: Satisfactory	51	3	29	52	3	30	52	3	29
D: Poor	40	3	25	40	3	20	40	3	23
F: Fail	25	7	19	25	7	13	25	7	17
National	48	16	100	52	16	100	49	16	100

M= Mean, **%**=Percentage, **SD**=Standard Deviation

Table-13 reveals that the mean percentage score in Science at national level was 49 (49% questions correctly answered). The data show that 31% students of both public and private schools obtained AI, A and B grades. Only 52% students got C & D grades whereas 17% were unable to pass the test. Comparing the data of public and private sectors it was observed that the score of 37% of private sector fell in category A1, A and B, whereas 27% students of public sector achieved the same grades. The average percentage score of private school students was 52 whereas it was 48 for the students of public schools. A significant difference was observed in the performance of public and private school students.

Graph - 9



4.10 Inter-District Differences in Science Test

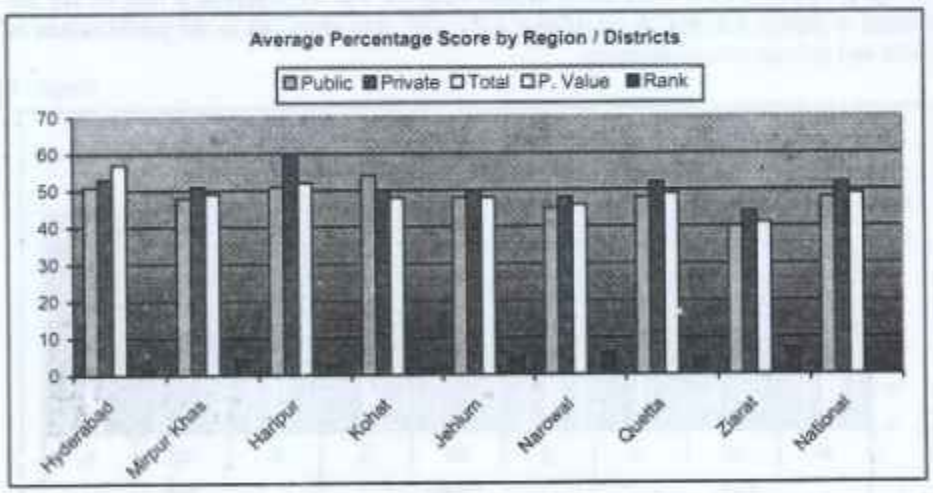
Table-14

Average Percentage Score by Region / Districts

Score	Public	Private	Total	P. Value	Rank
Hyderabad	51	63	57	0.000	1
Mirpur Khas	48	51	49	0.197	4.5
Haripur	51	60	52	0.001	3
Kohat	54	52	53	0.389	2
Jehlum	48	50	48	0.381	5
Narowal	45	48	46	0.123	6
Quetta	48	52	49	0.038	4.5
Ziarat	40	44	41	0.103	7
National	48	52	49	0.000	-

Table-14 depicts that the students of Hyderabad and Kohat obtained the highest score i.e. (both public and private schools) followed by the students of Haripur whereas the students of Ziarat were the lowest scorers except in Kohat. In all districts, the performance of the private school students was better than that of public school students. Significant difference of score was found in districts Hyderabad, Haripur and Narowal between the performance of public and private school students.

Graph - 10



4.11 Students' Achievement in Science Test by Area in Public and Private Schools

The rural and urban differences show disparity in level of quality of education. Students' achievement has been analyzed area-wise. Data are reported in table-15.

Table-15

Location	Public	Private	P. Value
Urban	47.72	16.13	0.000
Rural	48.29	53.28	0.001
P. Value	0.515	0.360	-----

Table-15 describes that rural students performed better than urban students of public sector and difference of score was not significant. The mean score of the urban, rural students of private schools was same. The performance of private students was better than that of their public counterparts and the difference was not significant. District-wise details are presented in table-16.

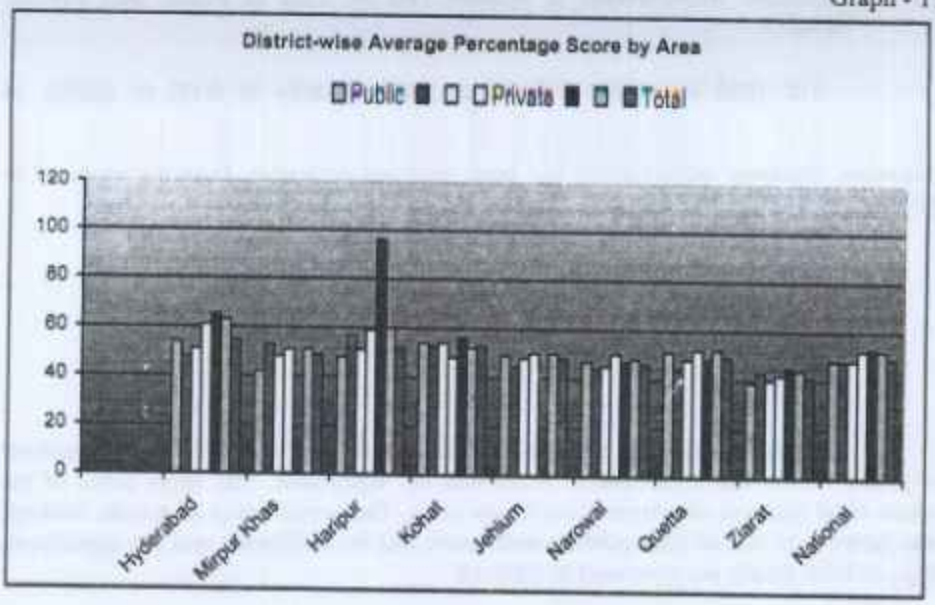
Table-16

District-wise Average Percentage Score by Area

District	Public			Private			Total
	Urban	Rural	Mean	Urban	Rural	Mean	
Hyderabad	54	48	51	61	65	63	55
Mirpur Khas	42	53	48	51	.	51	49
Haripur	48	57	51	59	96	60	52
Kohat	54	53	54	48	56	52	53
Jehlum	49	45	48	50	.	50	48
Narowal	47	44	45	50	47	48	46
Quetta	51	44	48	52	48	52	49
Ziarat	39	43	40	42	45	44	41
National	48	48	48	52	53	52	49

The above table-16 reveals inter-district differences with respect to location and type of schools. The data show that students of public schools in rural areas of Hyderabad, Mirpur Khas, Haripur and Ziarat out-scored their urban counterparts whereas students of urban areas of the public sector performed better than their rural counterparts in districts of Kohat, Jehlum, Narowal, and Quetta. The students of private schools of urban areas of Narowal and Quetta scored higher than their rural counterparts whereas the students of private sector of rural area of Hyderabad, Haripur and Ziarat scored higher than their urban counterparts.

Graph - 11



4.12 Gender Differences in Students' Performance in Science

The students' scores of both sectors by gender and location are reported in table-17.

Table-17

Gender	Public		Private	
	Urban	Rural	Urban	Rural
	Mean	Mean	Mean	Mean
Boys	45	47	51	51
Girls	51	50	54	57
P. Value	0.000	0.003	0.071	0.031

The performance of girls students of public schools was better than that of boys in urban area and result was significant. Similarly in the private schools, the performance of girls student was better than that of boys and difference of mean score was significant in rural area. District-wise data are explained in table 18.

Table-18

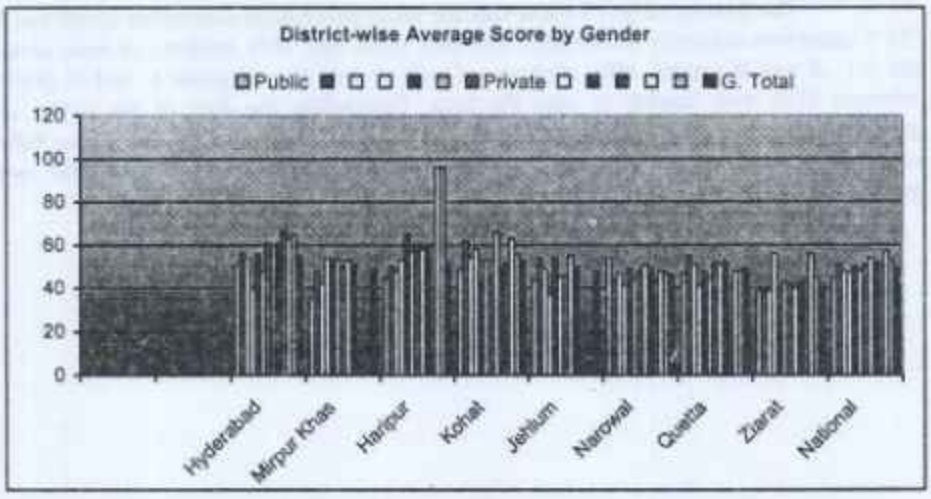
District-wise Average Score by Gender

District	Public						Private						G. Total
	Urban			Rural			Urban			Rural			
	B	G	T	B	G	T	B	G	T	B	G	T	
Hyderabad	51	56	54	40	56	48	61	.	61	66	63	65	55
Mirpur Khas	36	48	42	54	53	53	50	53	51	.	.	.	49
Haripur	45	50	48	53	65	57	60	58	59	.	96	96	52
Kohat	49	62	54	58	43	53	46	66	48	52	63	56	53
Jehlum	44	54	49	37	54	45	46	55	50	.	.	.	48
Narowal	54	44	47	41	49	44	48	51	50	43	48	47	46
Quetta	47	55	51	41	48	44	52	51	52	.	48	48	49
Ziarat	39	39	39	56	36	43	42	40	42	44	56	45	41
National	45	51	48	47	50	48	51	54	52	51	57	53	49

B = Boys, **G** = Girls, **T** = Total

Table-18 illustrates that urban girls student of public schools showed better performance in all districts except Narowal. As far as rural area of public sector was concerned girls students outperformed their counterparts in districts of Hyderabad, Haripur, Jehlum, Narowal and Quetta. On the contrary urban girls students of Kohat, Jehlum, Narowal, Quetta and Ziarat almost showed better performance than boys' students.

Graph - 12



The girls students of private sector in urban areas of district Haripur, Kohat, Narowal and Quetta scored higher than boys students. In the remaining districts the performance of boys students was better than girls students in urban schools. There were not private schools functioning in rural areas of few districts that is why any comparison among these districts was not possible.

4.13 Composite Score

The raw scores of each student in three subject tests were summed up in order to get the composite score. The grade wise distribution of composite score by sector is reported in table-19.

Table-19

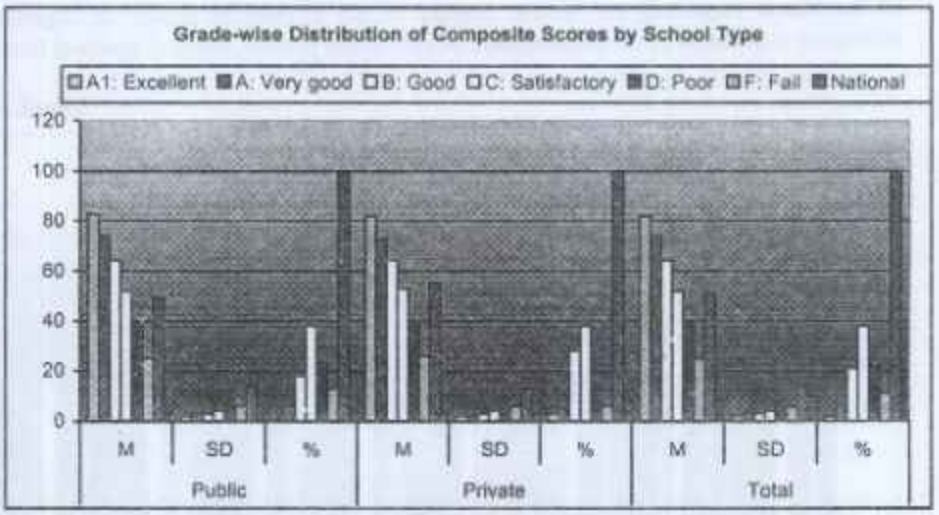
Grade-wise Distribution of Composite Scores by School Type

Grade	Public			Private			Total		
	M	SD	%	M	SD	%	M	SD	%
A1: Excellent	83	2	1	82	2	3	82	2	2
A: Very good	74	3	6	73	2	10	74	3	7
B: Good	64	3	18	64	3	28	64	3	21
C: Satisfactory	52	4	38	53	4	38	52	4	38
D: Poor	39	4	24	40	3	15	39	3	22
F: Fail	25	6	13	26	6	6	25	6	11
National	49	14	100	55	13	100	51	14	100

M= Mean, **%**=Percentage, **SD**=Standard Deviation

The data in table-19 show that the mean percentage composite score was 51 (51% questions correctly answered). The data show that 30% students of both sectors got A1, A and B grades, 60% students of both sectors scored grade C and D grades, whereas 11% were unable to pass the tests. Comparing the data of the public and private sectors it was observed that the scores of 41% students of private sector fall in category A1, A and B, whereas 25% students of public sector achieved the same grades.

Graph – 13



4.14 Inter-District Differences of Composite Scores

Composite scores of the selected districts were compared. The comparison is presented in table-20.

Table-20

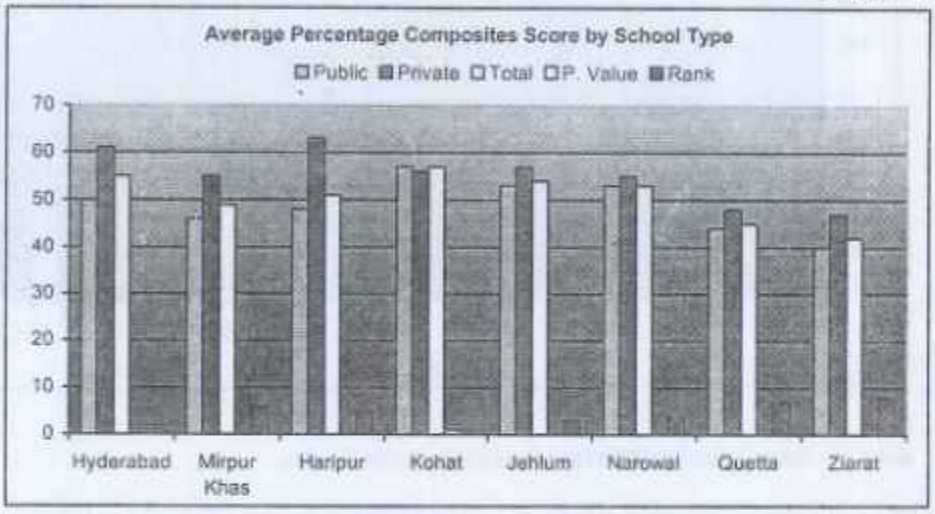
Average Percentage Composites Score by School Type

Score	Public	Private	Total	P. Value	Rank
Hyderabad	50	61	54	0.000	2.5
Mirpur Khas	47	55	49	0.000	4
Haripur	48	63	51	0.000	3
Kohat	56	59	57	0.170	1
Jehlum	53	57	54	0.103	2.5
Narowal	53	55	54	0.202	2.5
Quetta	44	48	45	0.009	5
Ziarat	40	47	42	0.000	6
National	49	55	51	0.000	-

The scores reported in table-20 indicate that there was no significant difference of mean in public and private schools in districts of Kohat, Jehlum and Narowal. However, significant difference was observed in districts of Hyderabad,

Mirpur Khas, Haripur, Quetta and Ziarat. The students of Kohat achieved the highest average scores followed by students of Hyderabad Jehlum and Narowal. The students of the Ziarat remained the lowest scorers in the composite scores. A significant difference was found in the performance of public and private sector at national level.

Graph – 14



4.15 Students' Achievement by Area on Composite Test

Table-21

Location	Public	Private	P. Value
Urban	49	56	0.000
Rural	49	55	0.000
P. Value	0.428	0.408	----

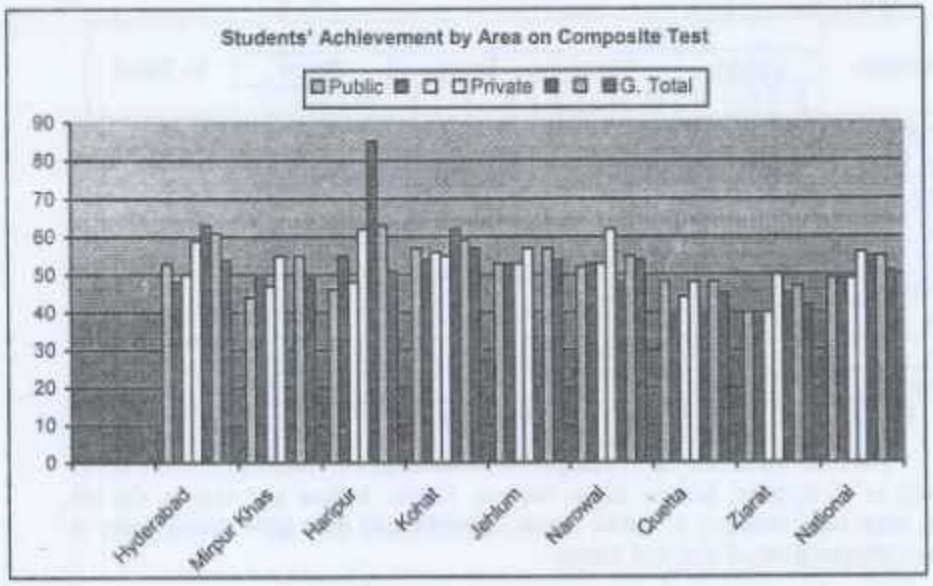
The mean percentage score of urban and rural students of public sector was 49. Whereas there was difference in the performance of private sector students by location and they got the 56 score in urban and 55 in rural and difference was not significant. As far as performance of public and private was concerned private sector performed better than public sector and difference was significant. District wise scores by location is reported in table-22.

Table-22

District	Public			Private			G. Total
	Urban	Rural	Total	Urban	Rural	Total	
Hyderabad	53	48	50	59	63	61	54
Mirpur Khas	44	49	47	55	.	55	49
Haripur	46	55	48	62	85	63	51
Kohat	57	54	56	55	62	59	57
Jehlum	53	53	53	57	.	57	54
Narowal	52	53	53	62	48	55	54
Quetta	48	39	44	48	39	48	45
Ziarat	40	40	40	50	45	47	42
National	49	49	49	56	55	55	51

It was observed from the above table that urban students of public sector in Hyderabad and Kohat performed better than their rural counterparts. The urban students of private sector of Narowal, Quetta and Ziarat outperformed their rural counterparts.

Graph - 15



4.16 Gender differences in Students' Performance

The composite student scores of both sectors by gender is reported in the following table:

Table-23

Gender	Public		Private	
	Urban	Rural	Urban	Rural
	Mean	Mean	Mean	Mean
Boys	46	48	54	53
Girls	52	51	60	57
P. Value	0.000	0.017	0.000	0.044

It was observed that the performance of urban girls students of both sectors and in both areas was better and difference of mean score was significant. District wise data are presented in table-24.

Table-24

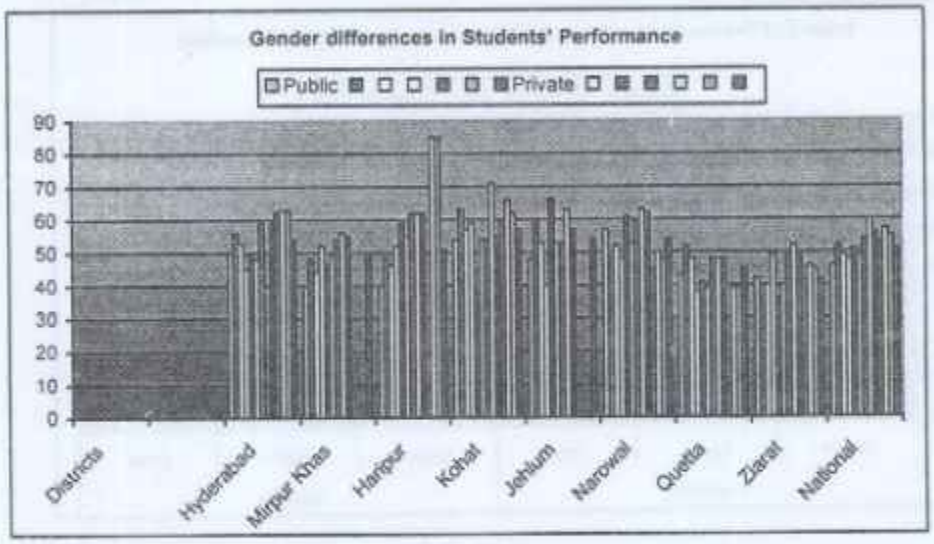
Districts	Public						Private						G. Total
	Urban			Rural			Urban			Rural			
	B	G	T	B	G	T	B	G	T	B	G	T	
Hyderabad	50	56	53	45	50	48	59	.	59	62	63	63	54
Mirpur Khas	40	48	44	52	46	49	54	56	55	.	.	.	49
Haripur	40	50	46	52	60	55	62	62	62	.	85	85	51
Kohat	54	63	57	59	45	54	54	71	55	60	66	62	57
Jehlum	48	59	53	40	66	53	53	63	57	.	.	.	54
Narowal	57	50	52	48	61	53	60	63	62	45	50	48	54
Quetta	43	52	48	38	41	39	48	48	48	.	39	39	45
Ziarat	42	35	40	49	36	40	50	52	50	45	46	45	42
National	46	52	49	48	51	49	54	60	56	53	57	55	51

B = Boys, G = Girls, T = Total

Table-24 mentions that urban girls students of public sector performed better in districts of Hyderabad, Mirpur Khas, Haripur, Kohat, Jehlum and Quetta. On the contrary, rural boys students of public sector outperformed their girls counterparts in districts of Mirpur Khas, Kohat and Ziarat.

It was revealed from the scores that urban girls of private sector scored the highest in districts of Mirpur Khas, Kohat, Jehlum, Narowal and Ziarat as compared to boys students. Whereas rural girls students of private schools in districts of Hyderabad, Kohat, Narowal and Ziarat outscored their boys counterparts. At national level urban girls of private sector outperformed their rural counterparts.

Graph - 16



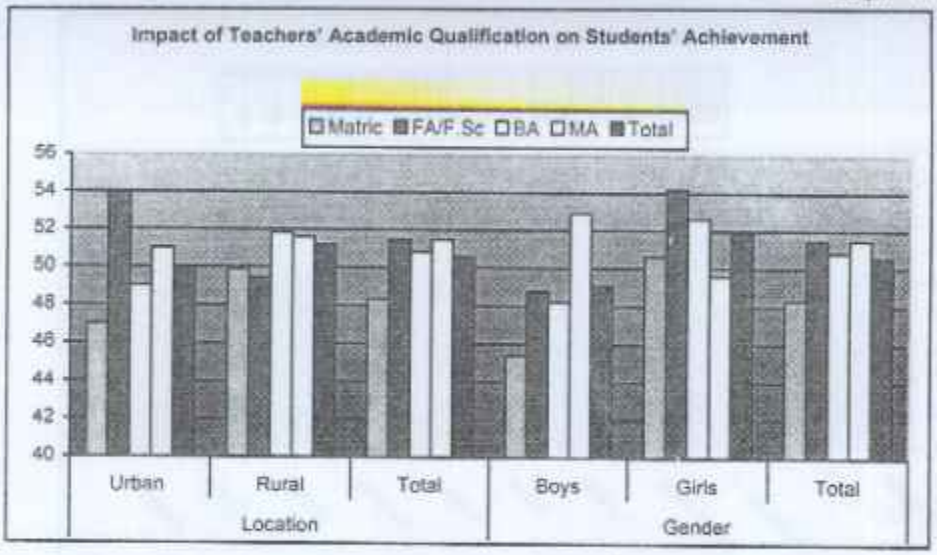
4.17 Impact of Teachers' Academic Qualification on Students' Achievement

Table-25

Academic Qualification	Location			Gender		
	Urban	Rural	Total	Boys	Girls	Total
Matric	47	50	48	45	51	48
FA/F.Sc	54	49	51	49	54	51
BA	49	52	51	48	53	51
MA	51	52	51	53	50	51
Total	50	51	51	49	52	51

It was observed that teachers' academic qualification had positive impact on students' performance. Teachers with intermediate qualification had positive. It is deplorable to note that as level of academic qualification is increased students' achievements remained same. As far as gender was concerned teachers academic qualification had more impact on girls students than boys. In urban areas teachers' academic qualification had more impact than in rural area.

Graph - 17



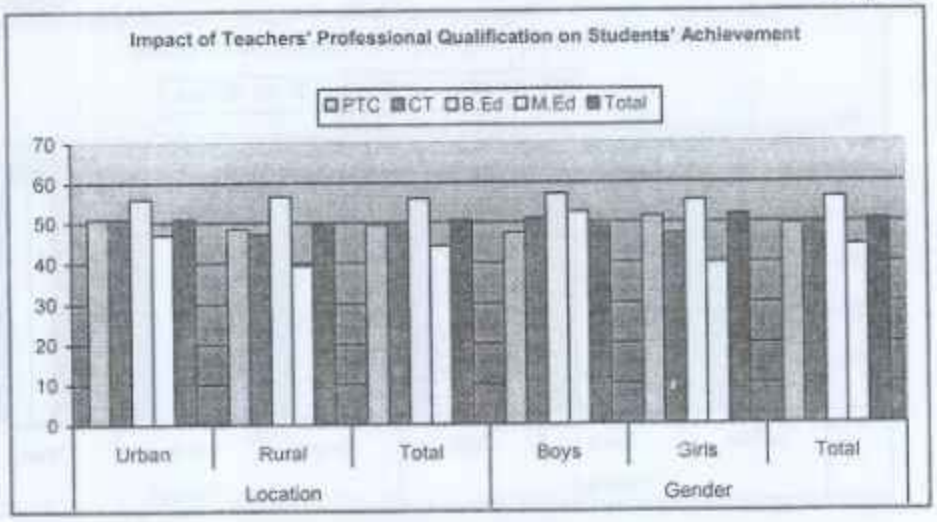
4.18 Impact of Teachers' Professional Qualification on Students' Achievement

Table-26

Professional Qualification	Location			Gender		
	Urban	Rural	Total	Boys	Girls	Total
PTC	51	48	50	47	52	50
CT	51	47	50	51	47	50
B.Ed	56	57	56	57	56	56
M.Ed	47	39	44	53	40	44
Total	51	50	51	49	52	51

It was observed that professional qualification of teachers had a significant effect on students' achievement. The students taught by B.Ed teachers got the highest scores followed by the students taught by PTC teachers. The students taught by M.Ed teachers got the lowest score. It seemed that the professional qualification of teachers up to B.Ed level had positive effect on students' achievement. Whereas M.Ed teachers had not positive impact on students achievement at primary level.

Graph - 18



4.19 Impact of Teachers' Experience on Students' Achievement

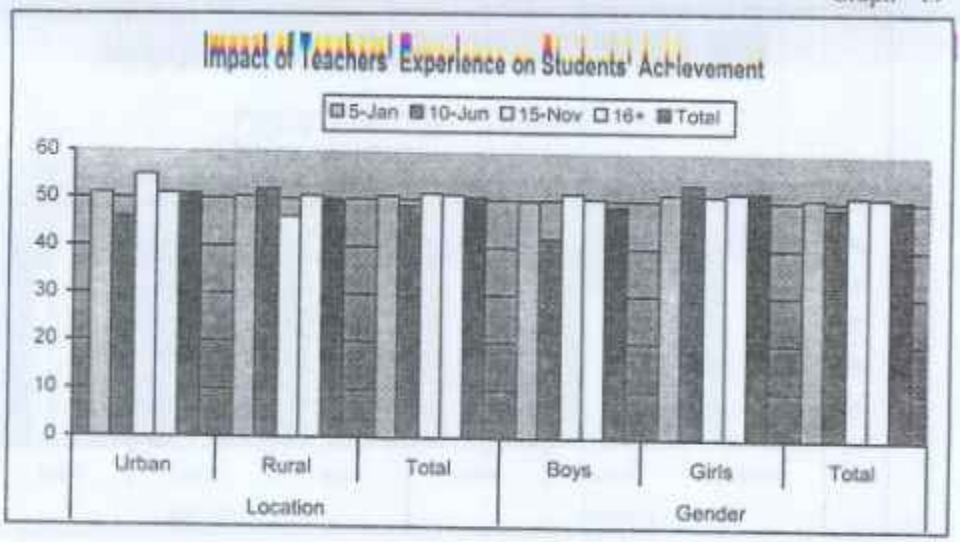
Teaching learning is a complex process that demands proper interaction among students and teachers. Teaching profession demands to learn methods and techniques for imparting knowledge to the students. It is usually expected that teachers through experience get command of subjects and learn teaching skills with the passage of time. In addition, in-service training of teachers also play a crucial role for enhancing professional skills of teachers. The impact of teachers experience on students' achievement was explored and the data are presented in table-27.

Table-27

Experience	Location			Gender		
	Urban	Rural	Total	Boys	Girls	Total
1-5	51	50	51	50	51	51
6-10	46	52	49	42	53	49
11-15	55	46	51	51	51	51
16+	51	51	51	50	52	51
Total	51	50	51	49	52	51

The data in above table-27 show that students taught by teachers having 1-5 and after 10 years experience were the highest scorers. It is interesting to note that the students taught by teachers having 6-10 years of experience got the lowest scores. As far as gender was concerned, teachers' experience had more impact on the performance of girls than on boys and it had slightly impact on the performance of urban than rural students.

Graph - 19



4.20 Impact of Physical Facilities in the School on Students' Performance

Physical facilities are the essential elements to facilitate teaching-learning process. The impact of physical facilities on students' achievement can be seen in table-28.

Table-28

S. No	Basic Facility	Mean % Score
1.	Water and electricity, toilet	49
2.	Water and electricity, toilet, boundary wall	51
3.	Water and electricity, toilet, boundary wall, furniture, playground and dispensary	53

It was observed from the above table that availability of physical facilities in a school had a significant impact on students' performance. The availability of drinking water, electricity, and boundary wall, toilets furniture, playground, and dispensary were determining factors and had positive impact on students' achievement.

4.21 Impact of Fathers' Education on Students' Performance

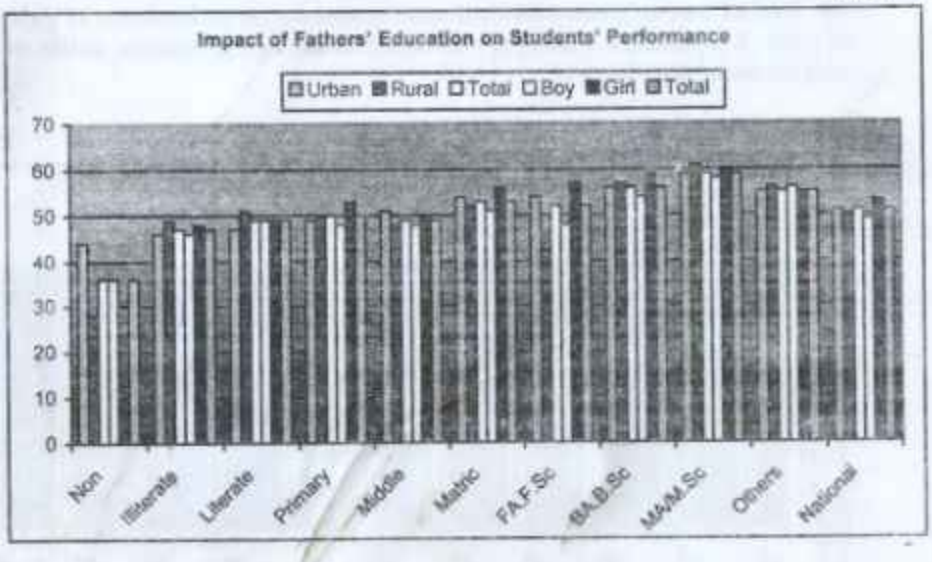
The father's education level is very crucial determining factor on a child's performance. Many educationists believe that educated fathers are usually more conscious about educating their children as compared to uneducated fathers. Impact of fathers' education on their children is shown in table-29.

Table-29

Father's Education	Urban	Rural	Total	Boy	Girl	Total
Non	44	28	36	36	.	36
Illiterate	46	49	47	46	48	47
Literate	47	51	49	49	49	49
Primary	49	50	50	48	53	50
Middle	51	48	49	48	50	49
Matric	54	52	53	51	56	53
FA.F.Sc	54	46	52	48	57	52
BA.B.Sc	56	57	56	54	59	56
MA/M.Sc	59	61	59	58	60	59
Others	55	56	55	56	55	55
National	51	50	51	49	53	51

It is observed that children of illiterate and literate fathers showed almost same performance. As the fathers' education increased from middle to MA/M.Sc, a consistent increase in average percentage score of children was noted. The level of father's education had even more impact on urban students than rural students. The level of father's education had more influence on the girls' performance than on boys. A significant difference was noted in average percentage scores of children whose fathers had higher level of education.

Graph - 20



4.22 Impact of Mothers' Education on Students' Performance

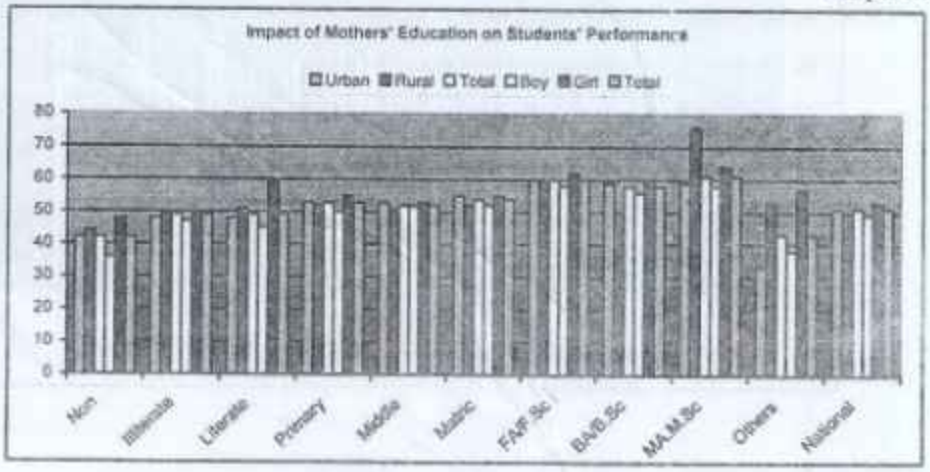
Mother plays vital role in character building and personality development of her children. The impact of level of mothers' education on the performance of their children was explored and scores are presented in table-30.

Table-30

Mother's Education	Urban	Rural	Total	Boy	Girl	Total
Non	42	44	42	36	48	42
Illiterate	48	49	49	47	50	49
Literate	48	51	49	45	59	49
Primary	53	52	53	50	55	53
Middle	53	51	52	52	53	52
Matric	55	52	54	52	55	54
FA/F.Sc	60	60	60	58	62	60
BA/B.Sc	59	50	58	56	60	58
MA.M.Sc	59	76	61	58	64	61
Others	33	53	43	38	57	43
National	51	50	51	49	53	51

A consistent increase in the mean percentage score of students was observed with increasing level of their mother's education. The level of mother's education had more impact on the urban students rather than on rural students. It was also observed that level of mother's education had more impact on the performance of girls than that of boys. A significant difference was found in average percentage scores of children with mothers education level.

Graph - 21



4.23 Impact of Fathers' Occupation on Students' Performance

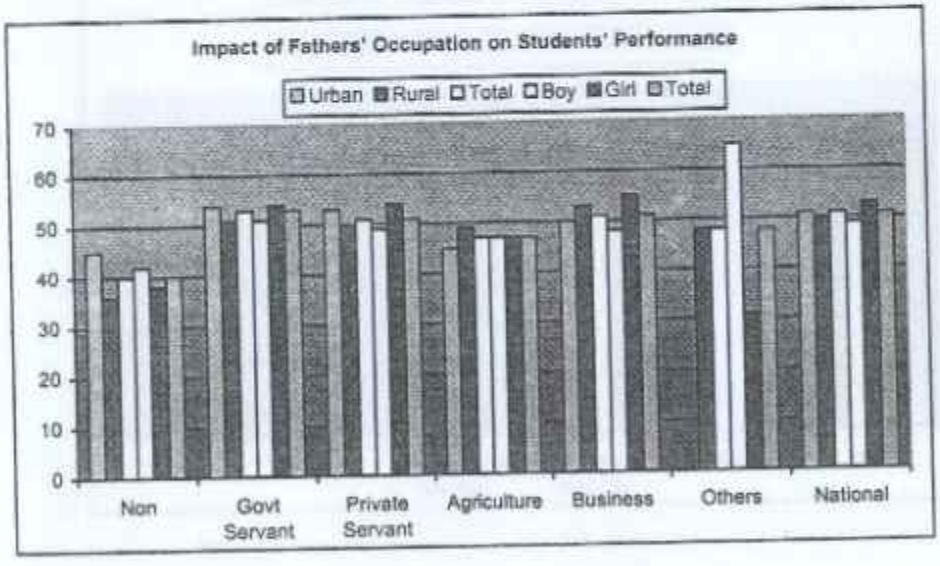
The father's occupation is a symbol of social status. This study examined the impact of father's occupation on the achievement of students. The data are reported in table-31.

Table-31

Father's Occupation	Urban	Rural	Total	Boy	Girl	Total
Non	45	36	40	42	38	40
Govt Servant	54	51	53	51	54	53
Private Servant	53	50	51	49	54	51
Agriculture	45	49	47	47	47	47
Business	50	53	51	48	55	51
Others	.	48	48	65	31	48
National	51	50	51	49	53	51

It was observed that children of government servant were the highest scorers, whereas the children of farmers were the lowest scorers. The father's occupation had more impact on the performance of urban students as compared to rural students. Similarly father's occupation had more impact on the performance of girls than that of boys.

Graph - 22



4.24 Impact of Mothers' Occupation on Students' Performance

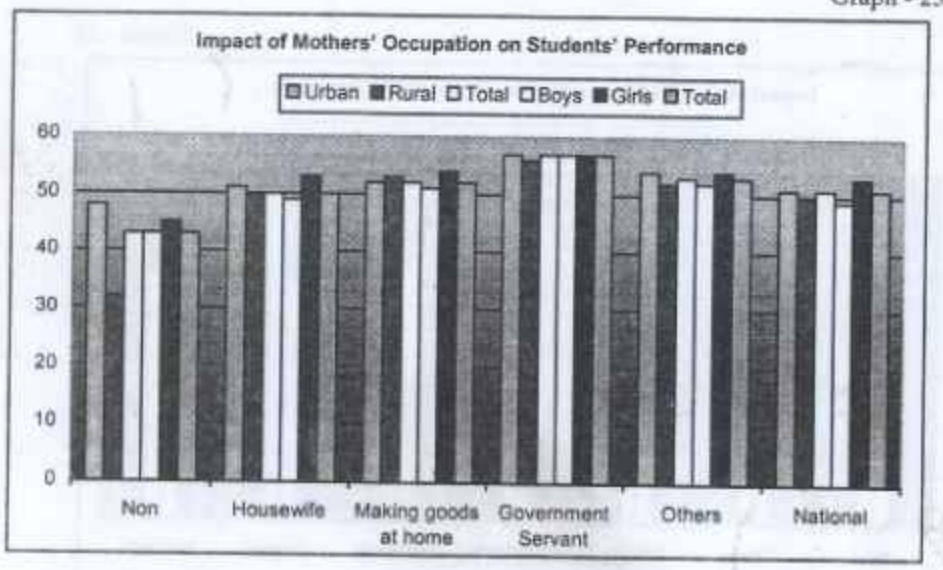
It is usually observed that occupation of mother is also considered as social status symbol. Mother contributes in socio-economic uplift of the family in general and particularly of her children. The data regarding impact of mothers' occupation on students' performance are presented in the following table-32.

Table-32

Mother's Occupation	Urban	Rural	Total	Boys	Girls	Total
Non	48	32	43	43	45	43
Housewife	51	50	50	49	53	50
Making goods at home	52	53	52	51	54	52
Government Servant	57	56	57	57	57	57
Others	54	52	53	52	54	53
National	51	50	51	49	53	51

It was observed that children of the mothers of government service got the highest scores. However, mother's occupation had more impact on the performance of urban children as compared to rural children. It was also noted that mother's occupation had more impact on the performance of girls than on boys.

Graph - 23



4.25 Views of the Students about Homework

Students were asked about homework whether their parents helped them in doing homework. Their responses are reported in the following table-33.

Table-33

Homework	Frequency	Percentage	Mean
Non Response	15	1	40
Yes	1352	71	52
No	535	28	48
Total	1902	100	51

The table-33 illustrates that 71% students got help from their parents at home and they achieved slightly better scores than those children who did not get help from their parents.

4.26 Impact of Homework Taught by Family Members

Students were also asked about their family members who helped them in doing their homework. Their responses are shown in table-34.

Table-34

Homework	Frequency	Percentage	Mean
No Response	63	3	45
Father	580	31	50
Mother	456	24	50
Brother	394	21	50
Sister	409	21	53
Total	1902	100	51

The data show that students taught by sisters got highest scores followed by those students who were helped by their parents and brothers.

4.27 Impact of Tuition on Students' Performance

Tuition has become tradition in our society. The impact of tuition was worked out and data are presented in following table:

Table-35

Tuition	Frequency	Percentage	Mean
Yes	716	38	51
No	1186	62	50
Total	1902	100	51

It was observed that tuition had no positive impact on the students' performance and no significant difference was found in performance of students.

4.28 Learning Achievement Trend

Academy of Educational Planning and Management conducted the series of studies on the qualitative aspects of primary education. The quality of education at primary level in Pakistan depends upon optimal utilization of available human and physical resources, which has direct influence on teaching learning process. It is an effort to assess and compare the performance of public and private schools regarding learning achievements of the students. The related variables such as teacher's academic and professional qualification, physical facilities, and socio-economic background of the students, parental education are major parameters. These research studies provide information on the achievement levels and comparison of the performance of different schools and subsequently highlights the quality of education in public and private sector at national, provincial and district levels. Table below summarizes the comparison of students performance (Mean Score) for the years 2003-04, 2004-05 and 2005-06 by subjects and schools type.

Table-36

Subject	2003-04			2004-05			2005-06		
	Public	Pvt	Total	Public	Pvt	Total	Public	Pvt	Total
Mathematics	46	51	48	45	51	47	44	49	46
Urdu	60	72	64	57	62	58	54	65	57
Science	59	62	60	52	55	53	48	52	49

* Pvt = Private

The table-36 indicates that the mean score of the student was 48 in Mathematics in 2003-04, which has declined to 46 in 2005-06. Whereas in the Urdu students got 57 mean score which increased upto 58in 2004-05 but again declined. As far as science subject was concerned consistence decline was observed in the mean score of the students achievements. It is interested to note that performance of private school students was better than public school students in all the subjects in achievement studies conducted from 2003-04 to 2005-06.

4.29 Teachers' Academic Qualification and Students' Achievement-Trend

Table-37

Academic Qualification	2003-04			2004-05			2005-06		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Matric	62	59	60	62	44	51	47	50	48
FA/F.Sc	61	55	58	50	47	49	54	49	51
BA	58	57	58	53	53	53	49	52	51
MA	61	57	59	58	54	56	51	52	51
Total	60	57	58	54	51	52	50	51	51

It was observed that teachers' academic qualification had positive impact on students' performance. As the level of academic qualification of teachers is increased students performance is also improved. The impact of teachers academic qualification by gender is presented in table-38.

Table-38

Academic Qualification	2003-04			2004-05			2005-06		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Matric	62	59	60	54	45	51	45	51	48
FA/F.Sc	57	59	58	48	49	49	49	54	51
BA	56	60	58	54	52	52	48	53	51
MA	59	58	59	58	54	54	53	50	51
Total	57	59	58	53	51	51	49	52	51

Table-38 shows that teachers academic qualification had more impact on the performance of girls students than boys.

4.30 Teachers' Professional Qualification and Students' Achievement

Table-39

Academic Qualification	2003-04			2004-05			2005-06		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
PTC	58	52	55	58	49	52	51	48	50
CT	60	63	62	52	48	50	51	47	50
B.Ed	58	57	57	53	53	53	56	57	56
M.Ed	63	63	63	50	54	51	47	39	44
Total	60	57	58	54	51	52	51	50	51

It was observed that professional qualification of teachers had positive impact on students' achievement. The students taught by B.Ed teachers got the better scores, other than those students who are being taught by other qualified teachers.

As far as gender was concerned data is presented in table-40.

Table-40

Academic Qualification	2003-04			2004-05			2005-06		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
PTC	53	57	55	54	51	52	47	52	50
CT	61	64	62	46	53	50	51	47	50
B.Ed	58	56	57	55	51	53	57	56	56
M.Ed	58	66	63	52	49	51	53	40	44
Total	57	60	58	53	51	59	49	52	51

Table-40 indicates that professional qualification of teachers had more impact on the performance on girls students than boys. As professional qualification is increased performance of girls students is more improved than boys.

4.31 Fathers' Education and Performance of the Children-Trend

The father's education level is very crucial determining factor on a child's performance. Many educationists believe that educated fathers are usually more conscious about educating their children as compared to uneducated fathers. Impact of fathers' education on their children is shown in table-41.

Table -41

Fathers Education	2003-04			2004-05			2005-06		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Illiterate	55	53	54	51	48	49	46	49	47
Literate	50	59	54	50	50	50	47	51	49
Primary	60	54	56	50	52	51	49	50	50
Middle	57	55	56	53	50	51	51	48	49
Matric	59	58	59	54	53	53	54	52	53
FA.F.Sc	64	58	61	60	54	58	54	46	52
BA.B.Sc	64	63	64	55	56	56	56	57	56
MA/M.Sc	65	60	64	61	60	60	59	61	59
National	59	56	57	54	51	53	51	50	51

Table-41 depicts that father's education had positive impact on the performance of their children. As far as location was concerned it was found that father's qualification had more positive impact on the performance of urban students than rural students.

As far as gender was concerned data is presented in table-42.

Table- 42

Fathers Education	2003-04			2004-05			2005-06		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Illiterate	53	56	54	49	49	49	46	48	47
Literate	54	55	54	53	45	50	49	49	49
Primary	56	57	56	51	51	51	48	53	50
Middle	55	57	56	53	50	51	48	50	49
Matric	59	59	59	54	53	53	51	56	53
FA.F.Sc	62	61	61	58	58	58	48	57	52
BA.B.Sc	62	65	64	56	55	56	54	59	56
MA/M.Sc	63	64	64	63	57	60	58	60	59
National	56	59	57	53	52	53	49	53	51

Table-42 shows that fathers' education had more impact on the performance of girls students than boys.

4.32 Mothers' Education and Performance of the Children-Trend

Mother plays vital role in character building and personality development of her children. The impact of level of mothers' education on the performance of their children was explored and scores are presented in table-43.

Table-43

Mothers Education	2003-04			2004-05			2005-06		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Illiterate	57	56	56	50	52	51	48	49	49
Literate	56	52	55	54	45	50	48	51	49
Primary	60	56	58	58	50	54	53	52	53
Middle	61	57	59	58	51	55	53	51	52
Matric	63	60	62	58	55	57	55	52	54
FA.F.Sc	61	57	60	58	59	58	60	60	60
BA.B.Sc	61	62	61	59	58	59	59	50	58
MA/M.Sc	65	60	64	66	56	62	59	76	61
National	59	56	57	53	52	53	51	50	51

A consistent increase in the mean percentage score of students was observed with increasing level of their mother's education. The level of mother's education had more impact on the urban students rather than on rural students.

As far as gender was concerned data is presented in table-44.

Table-44

Mothers Education	2003-04			2004-05			2005-06		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Illiterate	56	57	56	51	51	51	47	50	49
Literate	53	57	55	52	47	50	45	59	49
Primary	57	59	58	56	51	54	50	55	53
Middle	59	60	59	56	53	55	52	53	52
Matric	58	65	62	58	55	57	52	55	54
FA.F.Sc	57	62	60	59	54	58	58	62	60
BA.B.Sc	58	64	61	60	52	59	56	60	58
MA/M.Sc	63	65	64	60	66	62	58	64	61
National	56	59	57	54	51	53	49	53	51

Table-44 shows that mother's education had more impact on the performance of girls than that of boys.

Chapter 5

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Findings:

5.1 Students' performance in Mathematics, Urdu and Science

i) The mean percentage score in Mathematics, Urdu, and Science was 46, 57 and 49 respectively at national level. Performance of most of the students in Mathematics and Science was very poor, hence most of the students performed slightly better in Urdu. The performance of private school students in most subjects was better than the public school students. Similarly the performance of rural students in Mathematics subject was better than urban students. It was interesting to note that the performance of rural and urban students of private sector was almost same in Mathematics. Whereas performance of rural student was better than that of urban students in public schools in mathematics. The findings of this study indicate that the performance of girls' student was better than that of boys in all subjects. science.

ii) The findings of the study indicated that scores of 49% students of private school in Mathematics fall in A1, A and B category whereas the scores of 44% students of public schools fell in the same category. In Urdu, the scores of 69% students of private schools fell in A1, A and B category whereas the scores of 45% students of public schools fell in the same category.. In Science, the scores of 37% students of private school fell in A1, A and B category whereas the scores of 27% students of public schools fell in the same category. This indicated the outstanding performance of private school students as compared to that of public schools It is a matter of grave concern for the policy makers and planners dealing with the public sector education.

iii) Inter-District difference shows that students of Kohat, Jehlum and Narowal, were the highest achievers in Mathematics whereas the students of Quetta, Ziarat and Haripur were the lowest scorers. The students of Jehlum, Narowal and Hyderabad got highest scores in Urdu whereas the students of Ziarat and Quetta got lowest scores. The students of Hyderabad, Kohat and Haripur got highest scores in Science whereas the students of Ziarat, Narowal and Jehlum got lowest scores.

5.2 Composite Score of Students' Performance in Three Subjects

The total mean percentage composite score for both sectors was 51. It was 49% for public schools and 55% for private schools. The difference was significant. The scores of 41% students of private schools fell in A1, A and B category whereas the scores of 25% students of public schools fell in the same category. Majority of the students of districts of Kohat Hyderabad, Jehlum and Narowal got the highest average composite percentage scores whereas most of the students of districts of Ziarat and Quetta got the lowest scores. The urban students of private school performed better than their rural counterparts. Girls students of both sectors performed better than their boy counterparts.

5.3 Impact of Teachers' Qualification and Experience on Students' Performance

i) It was found that Teacher's academic and professional qualification had positive impact on the students' achievement. It had more impact on the performance of girls students than on the performance of boys students. Similarly teachers' qualification had more influence on the performance of urban than on the rural students.

ii) It was also found that students taught by teachers having intermediate level qualification got the highest score. It is deplorable to note that as level of academic qualification is increased students' achievements remained same. As far as gender was concerned teachers academic qualification had more impact on girls students than boys. In urban areas teachers' academic qualification had more impact than in rural area.

iii) It was also observed that professional qualification of teachers upto had bachelor level more impact on students' achievement. The students taught by B.Ed teachers got the highest scores followed by the students taught by PTC teachers. The students taught by M.Ed teachers got the lowest score. It seemed that the professional qualification of teachers up to B.Ed level had positive effect on students' achievement whereas M.Ed teachers had no impact on students achievement at primary level.

iv) It was found that teachers' experience had a positive influence on the students' achievement. Students taught by teachers having 1-5 years and after 10-year experience were the highest scorers. It was interesting to note that teachers either in the first 5 years of their service were effective or after 10 years. Teachers experience had more influence on girls than on boys and it had more impact on the urban than on rural students.

5.4 Impact of Physical Facilities on Students' Performance

It was observed from the data that availability of physical facilities in a school had a significant impact on students' performance. The availability of drinking water, electricity, boundary wall, toilets, furniture, playground, and dispensary were determining factors and had positive impact on students' achievement.

5.5 Impact of Parental Education on Students' Performance

i) The data showed that children of illiterate and literate fathers performed almost equally. As fathers' education increased from middle level to graduation, a consistent increase in average percentage score of children was noted. The level of father's education had more impact on urban students than on rural students. The level of father's education had more influence on the girls performance than that of boys.

ii) A consistence increase in the mean percentage score of students was observed with increasing level of their mother's education. It was found that impact of mother's education was more on girls than boys. Moreover, mother's education had more influence on urban students than rural students.

5.6 Impact of Parental Occupation on Students' Performance

It was observed that children of government servant were highest scorers, whereas the children of Farmers were the lowest scorers. The father's occupation had more impact on the performance of urban students as compared to rural students. Similarly father's occupation had more impact on the performance of girls than on boys.

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