Draft

(AEPAM/UNESCO Study No. 135)

MEASURING LEARNING ACHIEVEMENT AT PRIMARY LEVEL IN PAKISTAN

Conducted By:

Academy of Educational Planning and Management
Ministry of Education
Islamabad
in collaboration with UNESCO

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Executive Summary

The study was conducted by the Academy of Educational Planning and Management in collaboration with UNESCO. The main purpose of the study was to measure the level of learning achievement and develop a baseline data to meet national policy requirements and international obligations to UNESCO, UNICEF and to produce data for calculation of indicators on EFA. The study has focused on the following objectives:

1. To assess student's learning achievement in Science, Mathematics, and Language (Urdu) at primary level, in the context of curriculum objectives.

2. To develop qualitative database of national achievement scores in Science, Mathematics, and Language (Urdu) at primary level.

Existing examinations at primary level neither measure the real learning of students because of many factors nor provide insight for planning and policy reforms. For the purpose of assessing the amount of learning against the desired standards of performance at primary level, it is imperative to develop measurement capacity at national level. Better assessment measures would enable planners and policy makers to evaluate the causes of low achievement and to take appropriate actions for the improvement of quality of education.

For assessing the students achievements at primary level, tests were developed in the provinces and federal levels in isolation but the scores obtained through these tests were not comparable because of the differences in tests and the use of different instruments for data collection.

In the past, there was no services available to develop qualitative indicators to measure students achievements at national level. The National Education Policy 1998-2010 also emphasized the need for quality improvement of education. Keeping in view the existing situation and to furnish qualitative indicators of education, it was felt desirable to launch a nation wide study on Measuring Learning Student Achievement at primary level.

The Academy, initiated this study in collaboration with UNESCO. In this regards, a Technical Committee Comprising representatives from the provinces/regions, Curriculum Wing, Ministry of Education and National Institute of Psychology (NIP), Quaid-e-Azam University. The committee reviewed the national curriculum and textbooks of Science, Mathematics and Urdu from class-I to class-IV developed by each province for development of tests for these subjects. Test papers were developed and pre-tested.

In order to ensure the validity of the tests, an appropriate sample of the contents of curriculum and textbooks upto class-IV were taken by the experts for development of achievement tests. Reliability was ensured by applying split-half reliability method. Spearman-Brown prophecy formula was used to calculate correlation. Applying the said formula the reliability for Science was .93, it was .85 for Mathematics and .96 for Urdu.

Serious efforts were made to select a sample of a reasonable size representing students of grade-V both boys and girls in urban and rural areas throughout Pakistan. Keeping in view the representation of all the areas, 28 out of 131 districts were selected from all the provinces/regions. The total number of 145 primary schools were selected of which 75 were boys and the remaining were girls schools. The total number of students of class-V 2794 were included in the sample out of which 1411 were boys and 1383 were girls . Out of the total number of 2794 students, 1345 were urban students and the remaining i.e. 1449 were rural students. The tests of Science, Mathematics and Urdu based on the curriculum and textbooks of class-IV were administered to the selected students of class-V throughout the country.

The following were the main features of the study:

- The students demonstrated high level of performance in Science and Urdu as compared to Mathematics (the average score for both Science and Urdu were 72% whereas for Mathematics it was 58% at national level).

- Girls performance was much better in Science and Urdu at national level as compared to boys whereas boys showed slightly better performance in Mathematics than girls at national level (the average score of girls was 74% and it was 71% for boys in Science at national level. The average score in

Mathematics for boys was 59% whereas it was 57% for girls at national level. The average score in Urdu was 75% for girls and it was 68% for boys and at national level).

- In all subjects urban students out scored their rural counterparts (the score of urban students was 76% and it was 69% for rural students in Science at national level. In Mathematics the score of urban students was 62% whereas it was 54% for rural students at national level. In Urdu the score of urban students was 76% and it was 67% for rural students at national level) .

- Students of Sindh consistently ranked the highest scores in all subjects followed by Punjab and NWFP whereas the students of Federal Areas and Balochistan consistently ranked the low scores in all subjects. In all the provinces girls out performed boys in all subjects except Mathematics. In Mathematics, girls also out scored boys in Sindh and Punjab whereas in NWFP, Balochistan and Federal Areas boys out performed girls. In all subjects urban students did better than their rural counterparts in all provinces. Students of Sindh were the high achievers in all subjects whereas students of Federal Areas and Balochistan were consistency low achievers in all subjects.

- In Punjab girls out performed boys in all subjects. Urban students did better than rural students. Students of Punjab did better in all subjects.

- In Sindh girls demonstrated high level of performance in all subjects as compare to boys except Science where boys did slightly better than girls. The level of performance of urban and rural students was same in Science. Rural students did better than urban students in Mathematics whereas urban students out performed rural students in Urdu. A marginal difference was observed between the performance of urban and rural students in all subjects. Girls were the high achievers in all subjects.

- In NWFP, the level of performance of girls was better than boys in Science and Urdu whereas the level of performance of boys was better than girls in

Mathematics. In all subjects urban students out performed their rural counterparts.

- In Balochistan the level of performance of girls in Science and Urdu was better than boys whereas the performance of boys was better than girls in Mathematics. The level of performance of urban students was better than their rural counterparts in all subjects.

- In Federal Areas boys did better than girls in Science and Mathematics whereas no gender gap was observed in the level of performance of students in Urdu. Urban students did better than their rural counterparts in all subjects.

Introduction

In Pakistan learning assessment of children usually takes place in schools through teacher made tests. All public primary schools arrange annual internal promotion examinations every year. A system of automatic promotion is introduced but teachers do not agree with this idea mainly because of their non-familiarity of the teaching techniques of multi-ability children. Teachers do not find time to work with individual student because the children are not only multi-ability but also multi-age (4-12 years) and multi-grade (-I to V). Under the existing working conditions, teachers usually support the assessment of children's learning through internal examinations. Presently, Primary Education Directorates organize examinations at the end of five years of schooling usually for outstanding students to grant scholarships. Head teachers do not allow week students to appear in the scholarship examinations arranged by the Directorate of Primary Education. The standard and quality of education vary from school to school. Currently, standardized test services at national level as well as provincial level are not available for measuring learning achievements of students at primary level. In order to asses the quality of out-put of the education system at primary level, it is imperative to develop some standardized learning achievement tests at national level.

Keeping in view the importance of learning achievement level of students at primary level in Pakistan the AEPAM has conducted this study in collaboration with UNESCO. In past, some isolated efforts have been made from time to time to assess the student achievement but each study had adopted a different approach and dimension. This study therefore was design to create a data so that some qualitative indicators may be developed for diagnostic purposes.

Rationale

The government of Pakistan is confronted with the challenge to provide universal access to primary education of high quality. This can be assessed by setting standards for performance and measurement of achievement. Learning achievements can be improved by setting clear learning objectives and high performance standards for each subject. Pakistan is a signatory to the Jomtien Declaration which includes learning acquisition as an essential component of the concept of Universalization of Primary Education (UPE). The declaration

cites that "the focus of basic education must, therefore, be on actual learning acquisition and outcome, rather than exclusive upon enrolment, continued participation in organised programmes and completion of certification requirements".

The National Education Policy 1998-2010 has proposed the integration of primary and middle level education into elementary education. It proposes the introduction of a system for monitoring of learning achievement. The policy further states that national assessment capacity shall be built by instituting a system to monitor the performance at grade V and VIII. Specifically the policy has assigned this responsibility to the AEPAM as stated below:

a) Data collected through provincial EMISs and collected by AEPAM through National Education Management Information System (NEMIS) shall be recognized as one source for planning, management, monitoring, and evaluation purposes to avoid disparity and confusion.

b) Databases of critical indicators on **qualitative aspects** of educational growth shall be developed and maintained by AEPAM for developing sustainable indicators of progress, based on more reliable and valid data to facilitate planning, implementation and follow up (National Education Policy 1998-2010).

To meet the NEP (1998) requirements and obligations of World Conference on Education for All declaration (1990), measuring learning achievements at primary level is extremely important. Present efforts are towards the assessment of EFA targets and NEP commitments.

For the purpose of assessing the amount of learning against the desired standards of performance at primary level, it is imperative to develop measurement capacity at national level. Existing examinations at primary level do not measure the real learning of students because of many factors. The results of these assessments do not provide insight for planning and policy reforms. Better assessment measures would enable planners and policy makers to evaluate the causes of low achievement and to take appropriate actions for the improvement of student achievements. Efforts are being made to introduce students learning

evaluation services to be institutionalized in each province that will assist to start the process of assessing students' achievement at primary level. This will help to develop a national database of student performance at primary level. At a later stage the scope of the study would be expanded to other levels of education system.

Objectives

The main purpose of the study was to measure the level of learning achievement and develop a baseline data to meet national policy requirements and international obligations to UNESCO, UNICEF and to produce data for calculation of indicators on EFA. At this stage, the study has focused the following two objectives:

1. To assess student's learning achievement in Science, Mathematics, and Language (Urdu) of grade-IV at primary level in the context of curriculum

2. To develop qualitative database of national achievement scores in Science, Mathematics, and Language (Urdu) at primary level.

Review of Relevant Literature

Research findings suggest that teachers' qualifications and subject knowledge have strong correlation with students' performance. Teachers with a better knowledge of subject material and good written and verbal language proficiency produce better performing students. Teachers' own subject knowledge and formal education had more impact on students performance than did pre-service training (Warwick and Riemers 1992).

The curriculum plays an important role in affecting students' achievements. Curriculum defines the subjects to be taught and provides guidance in respect of the frequency and duration of the instructions. Curricula and syllabi should be closely linked to performance standards and measures of outcome.

Review of literature particularly research studies/surveys conducted on student's learning achievement at primary level in Pakistan showed low level of achievement. An early national survey on student achievement grade-4 (Science) and grade-5 (Mathematics) conducted to determine the impact of first Primary Education Project (PEP-1), indicated that students obtained an average of 38 percent marks in science and 35 percent in Mathematics (Shah, M.H, 1984, pp. 211).

The BRIDGES project study regarding "Teacher Characteristics and Student Achievement in Mathematics and Science" , reported the average (mean) scores 11.7 for Mathematics-4 and 12.4 for Mathematics-5. According to the same study the average scores for science-4 was 13.8 whereas for science-5 it was 16.3 (Warwick, D.P., Riemers F. & McGinn, N. 1989 pp. 3).

Another study under the BRIDGES Projects entitled "Effects of the Primary Education Projects of Students' Achievement and Practices of Primary School Teacher in Pakistan" indicated that average scores of student of grade-4 Mathematics taught by the Project and Non-Projects teachers are 14.17 and 11.99 respectively, which indicated a border line differences. Whereas no significant difference was found in the average score of science in grade-4 between the Projects and Non-Projects schools. The average scores of grade-4

(science) was reported as 15.81 and 14.20 for Projects and Non-Projects schools respectively. The average scores of grade-V in Mathematics and Science were not significantly different. This study reported no significant difference between the Project and Non-Project Schools. (Malik,A.N 1990 pp.6).

The BRIDGES School Effectiveness Studies identified the following factors contributing towards higher achievement of students at primary level in Pakistan when:

- The school is located in an urban rather than a rural area;
- Teachers have higher levels of formal education;
- Student achievement increases with every additional year of the teacher's schooling;
- Teachers are responsible for one class rather than several i-e single-grade teaching instead of multi-grade teaching; and
- Teachers have students who can translate their presentations to those students who do not understand the teacher's language (Reimers F. and Warwick, D.P., 1991 pp.2).

The BRIDGES study on "Teaching Practices to Increase Student Achievement: Evidence from Pakistan" found an average class achievement scores for Urdu 34 percent, for Mathematics 21 percent and for Science 30 percent. (Rugh,A.B, Malik,A.N., & Farooq,R.A., 1991 pp.11).

A national survey of grade 5 students was conducted to identify "determinants of Primary students' achievement (MSU 1995) indicated the following average percentage score in Mathematics, General Knowledge, and Comprehension (MSU 1995 Table 2.1):

Subject	Students' score by Gender		
	Girls	Boys	Total
Mathematics	44.08	47.92	44.60
General Knowledge	77.05	77.99	74.35
Comprehension	75.92	63.07	69.07

The Mathematics and Science tests developed by the World Bank and Non-Formal Education Wing, Ministry of Education were used for assessing learning achievements at primary level for the projects sponsored by World Bank. The same tests were used by the BRIDGES project for assessing student's learning achievements at primary level. The tests developed by MSU to evaluate the student's achievement at primary level were based on textbooks of class 3 and 4 and these were administered to class-V students.

Education Ability Test (Level 5) consisting of 50 items for the subjects: Language, Mathematics, Science & General Information, and Reasoning was developed by National Institute of Psychology (NIP), Quad-i-Azam University, Islamabad to evaluate students' cognitive educational outcomes. The test items were constructed keeping in view the curriculum and textbooks of grades 3, 4, 5, 6 and 7. The test was developed for students of grades 4, 5, and 6. The mean scores for complete test for 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).

The provinces also developed their own tests for assessing the students achievements but the scores obtained through these tests were incomparable due to the use of different instruments for data collection.

The critical issue being faced by the Government of Pakistan is not just to bring children to primary school but to provide quality education for effective learning. The results of National survey of educational development indicated a very low level of student learning achievement: (i) The basic competencies of children in a nationwide sample of 11 to 12-year-old primary level graduates were very low: only 33.5 percent students could read with comprehension; and only 17.4 per cent could write a letter and (ii) in another study, fewer than 10 per cent of the representative sample were competent in basic reading and comprehension. (Haq, M., & Haq, K., 1998 pp.77).

Methodology

Development of Learning Achievement Tests

The development of achievement tests of Mathematics, Science and Urdu was the major task for conducting of this study, therefore, special efforts were made to develop substantially reliable and valid tests. After development of the tests these were pilot tested and retested by conducting item analyses for each item. The difficulty level and discrimination level of each item for all the three tests were calculated and finally the items with standard discrimination level were retained and the tests' items were arranged in order of difficulty to facilitate low achievers. The process of instruments development is given below:

Procedure of Developing Learning Achievement Tests

A Technical Committee comprising representatives from the provinces/regions, Curriculum Wing, Ministry of Education and National Institute of Psychology (NIP), Quaid-e-Azam University was constituted for the development of Standardized Achievement Test. The tests items were written covering the curriculum objectives and content materials of textbooks upto grade- IV in Science, Mathematics, and Language developed by each province. Two meetings of the committee were held in Islamabad. In the first meeting the committee developed a draft items pool for the Achievement Tests which were pilot tested in the primary schools of ICT, Punjab, NWFP and FANA.

After conducting pilot testing, the data was coded and entered into computer for analyses. Item analyses for each item and for each test were carried out to determine the difficulty level and discrimination level. The results of pilot testing suggested problems in test items. The Technical Committee revised the test items in the light of the results of pilot testing during the second meeting. Efforts were made to resolve the issues of the test contents, formate and administration procedure. It was decided to develop written instructions for administration of the test. The committee revised the tests and recommended another pilot testing. As per recommendations of the technical committee, the revised version of tests were pilot tested in rural and urban schools of ICT.

Items analyses of the second phase of pilot testing were carried out for determining the discrimination level and difficulty level of each item. Based on these analyses the tests were finalized for administration to the students of selected schools. The final versions of tests were arranged in ascending order of difficulty level to facilitate low ability students.

Tests' items, which were not discriminating between high achievers and low achievers were discarded.

Validity and Reliability of Tests

Validity and reliability is the crucial factors for achievement tests. In order to ensure the validity of the test, an appropriate sample of the contents of curriculum and textbooks upto class-IV were taken by the experts for development of achievement tests. Reliability was ensured by applying split-half reliability method. Spearman-Brown prophecy formula was used to calculate correlation. Applying the said formula to determine the reliability (r), the following results were obtained:

(1) Reliability (r) for Science = .93 (2) Reliability (r) for Mathematics= .85
(3) Reliability (r) for Urdu= .96

The values of tests suggest all the three tests are substantially reliable. As per recommendations of the Technical Committee, a detailed manual containing instructions for the administration of tests was prepared and distributed to the provincial coordinators for training of the field workers. Keeping in view the average time taken by students for each subject during the pilot testing, it was decided to allow one hour for Mathematics, 45 minutes for Science and Urdu as standard time for solving test papers.

Sample Size

Serious efforts were made to select a sample of reasonable size representing students of grade-V boys and girls in urban and rural areas throughout Pakistan. A sample of five hundred and sixty students was selected with an equal weightage from each province/ region. This method was adopted in order to adjust the results under the concept of probability proportionate to the total school size. At the first stage, a sample of 20 percent

districts was selected from each province/region. At second stage schools both male & female, and urban & rural from each district/region were randomly selected from list of schools of selected districts provided by the provincial education departments. It is worth mentioning that the schools selection for inclusion in sample was not strictly random because some schools were situated in far-flung areas where the field workers could not reach easily . Therefore, purposive sampling procedure was also adopted in case of these schools. At the third stage, 20 students from the sample schools were selected randomly to whom the achievement tests were administered. The distribution of sample in each category from all provinces/regions is given in table-1.1.

Table-1.1

Province/Region	Total Districts	Sample Districts	Sample Primary Schools	No. of Sample Students
Punjab	35	7	28	560
Sindh	21	4	28	560
NWFP	23	5	28	560
Balochistan	26	5	28	560
FATA	13	2	8	160
FANA	5	2	8	160
AJK	7	2	8	160
ICT	1	1	4	80
Total	**131**	**27**	**143**	**2800**

According to sample design the tests papers were to be administered to 2800 students but the tests were administered to 2850. Out of which 2794 students solved test papers and the remaining test papers of 56 students were discarded due to incompleteness or no responses during data cleaning. The sample distribution by province/region and by gender according to the data obtained from the provinces/regions is given in the table-1.2:

Table 1.2

Province/ Region	Total Districts	Districts	Primary Schools			Sample Students		
			Boys	Girls	Total	Boys	Girls	Total
Punjab	35	7	14	14	28	280	280	560
Sindh	21	4	14	14	28	277	280	557
NWFP	23	5	15	11	26	272	276	548
Balochistan	26	5	15	16	31	272	265	537
FATA	13	2	4	4	8	83	84	167
FANA	5	2	5	4	9	78	70	148
AJK	7	2	4	5	9	80	80	160
ICT	1	1	4	2	6	69	48	117
Total	**131**	**28**	**75**	**70**	**145**	**1411**	**1383**	**2794**

Out of the total number of 2794, 1345 (48%) were urban students and the remaining 1449 (52%) rural students. Out of the 1345 urban students 639 were boys and 706 girls. Out of the 1449 rural students 772 were boys and 677 girls.

Data Collection

In order to discuss the technical and practical aspects of data collection mechanism, one day workshop of provincial/regional coordinators was organized in AEPAM, Islamabad. During the workshop the provincial/regional coordinators were briefed about the main purpose of study, administration of tests papers, recruitment of field workers and their training and time-frame for data collection. Each aspect was discussed in detail. The field workers were recruited by the provincial coordinators and trained before starting the field work. The data were collected by field workers under the supervision and guidance of provincial coordinators to whom the test papers were handed over in the workshop.

Monitoring and Evaluation of Data Collection

Realizing the significance of accuracy, reliability and validity, it was decided

that the monitoring of data collection would be done by AEPAM. Therefore, monitoring teams consisting of faculty members and research assistants of the Academy visited the respective provinces/ regions. The monitoring teams were in field during the data collection. They also helped the provincial coordinators in training of the field workers.

Data Coding and Entry

Key for data coding and entry was prepared. Data entry operators were trained. MS Access Data Base package was used for data entry in Computer Lab AEPAM.

Data Analyses

Data was subjected to statistical treatment using descriptive statistics frequencies, mean, standard deviation, and maximum and maximum scores were computed. Statistical analyses were done for assessing the overall scores at national and provincial levels by gender and location of schools. In addition to draw inference, analysis of mean/variance was used to examine the significant mean differences by province/region, gender and location of schools at .05 level of significance. Further, "t" and "F" tests were used to examine the statistical significance between mean/variance of the groups by gender, location at national as well as provincial levels.

Results

The results of tests administered to the class-V students have been presented in this section. The Science test consisted of 35 multiple-choice items, the Mathematics test comprised 33 items, and the Urdu test was 35 items.

Every efforts have been made to present the results of data analyses as meaningful and simple as possible. The students' scores (in percentage) in Science, Mathematics and Urdu at national level, provincial/regional level and by gender and location have been reported in all possible tables. Statistics techniques were used to draw conclusions such as mean, S.D. range etc. Similarly, in order to determine the difference between average percentage scores for each subject by gender and location at national and provincial levels statistical techniques/tests were used. The hypotheses were that the average percentage scores for each subject by gender and location were equal at national and provincial levels. The hypothesis were tested at 5% level of significance. The data was subjected to sophisticated statistical treatment to draw inferences about the significance difference at inter provincial level.

Students Performance Profile at National Level

Table-2 Students achievements (in percentage) in Science, Mathematics, and Urdu at national level

Descriptive Statistics	Subjects		
	Science	Mathematics	Urdu
Mean	72	58	72
Standard Deviation	17	24	24
Maximum	100	100	100
Minimum	3	3	2

Data in table-2 indicate that the overall average scores of students for both Science and Urdu were 72 whereas for Mathematics it was 58. The results show that the students did better in both Science and Urdu tests as compared to Mathematics. It was observed that the standard deviation for Science was 17 and it was 24 for both Mathematics and Urdu which indicates that there was less variation in the level of performance of students in Mathematics and more variation in Urdu and science. The maximum and minimum scores were about the same for all subjects.

Performance By Gender

Table-3 Students achievements (in percentage) in Science, Mathematics, and Urdu by gender at national level

Descriptive Statistics	Subjects								
	Science			Mathematics			Urdu		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	71	74	72	59	57	58	68	75	72
Standard Deviation	18	17	17	23	24	24	24	23	24
Maximum	100	100	100	100	100	100	100	100	100
Minimum	3	6	3	3	3	3	2	2	2

It can be observed from table-3 that the average percentage score in Science for

girls it was 74 and for boys it was 71 and which shows that girls performance was slightly better than the boys. In Mathematics average percentage score for boys was 59 and for girls it was 57 which indicates that boys did better than girls in Mathematics. In Urdu the average score for girls was 75 and it was 68 for boys which indicates that girls performance was better than boys. It was also observed that the standard deviation for boys and girls in each subject was almost the same. It can be concluded there was no wide variation in the scores of male and females students in Urdu.

Performance By Gender and Location

Table-4 Students achievements (in percentage) in Science by gender and location at national level

Descriptive Statistics	Location					
	Urban			Rural		
	Boys	Girls	Total	Boys	Girls	Total
Mean	75	78	76	68	69	69
Standard Deviation	16	14	15	19	18	19
Maximum	100	23	6	3	97	97
Minimum	6	100	100	97	6	3

It was noted from the table-4 that the average percentage score in Science for urban boys was 75 and for rural boys it was 68 which indicates that the performance of urban boys was better than rural boys. The average percentage score of urban girls was 78 and it was 69 for rural girls which shows that urban girls performed better as compared to rural girls. This indicates that urban students out performed in Science as compared to their rural counterparts. It was noticed that the standard deviation both for urban boys and girls was less than the rural boys and girls which indicates less variation in the scores of urban students as compared to rural students.

A significant difference was observed between the mean score of boys and girls

and a significant difference was also noticed between the average score of urban and rural students in Science.

Table-5 Students achievements (in percentage) in Mathematics by gender and location at national level

Descriptive Statistics	Location					
	Urban			Rural		
	Boys	Girls	Total	Boys	Girls	Total
Mean	62	62	62	56	52	54
Standard Deviation	22	23	22	23	25	24
Maximum	97	100	100	100	100	100
Minimum	3	3	3	3	3	3

It was revealed from the table-5 that the average percentage score in Mathematics for urban boys was 62 and for rural boys was 56 which demonstrates the high performance of urban boys over rural boys. The average percentage score for urban girls was 62 and it was 52 for rural girls which shows that the urban girls outperformed the rural girls. The results indicated that both urban students did better than their rural counterparts in Mathematics. It has been observed that the standard deviation by gender and location was about the same with a slight difference of about 3 percent.

It was evident from the results that there was no significant difference between average percentage scores of boys and girls whereas a significant difference was observed between the average percentage score of urban and rural students in Mathematics.

Table-6 Students achievements (in percentage) in Urdu by gender and location at national level

Descriptive Statistics	Location					
	Urban			Rural		
	Boys	Girls	Total	Boys	Girls	Total
Mean	73	79	76	64	71	67
Standard Deviation	23	22	22	25	24	25
Maximum	100	100	100	100	100	100
Minimum	2	2	2	2	2	2

It was emerged from the table-6 that the average percentage score in Urdu for urban boys was 73 and it was 64 for rural boys which shows that the urban boys did better than rural boys. The average percentage score was 79 for urban girls and 71 for rural girls which indicates that urban girls out scored rural girls. The results indicated that urban students did better than their rural counterparts. The standard deviation indicated less variation in scores between groups of students by gender and location.

The results indicates a significant difference between the average percentage score of boys and girls in Urdu. A significant difference was also noted between the average score of urban and rural students in Urdu.

Provincial/Regional Students Performance Comparision

Table-7 Average percent score in Science by gender, location and province/region

Province/ Region	Urban			Rural			All areas		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
National	75	78	76	68	69	69	71	74	72
Punjab	80	88	84	80	79	79	80	84	82
Sindh	86	85	85	86	82	85	86	84	85
NWFP	70	73	72	65	71	68	66	72	69
Balochistan	68	68	68	52	68	60	62	68	65
* Federal Areas	67	71	69	60	54	57	63	60	62

*Federal Areas: The scores of students of FANA, FATA, AJK and ICT have been combined.

It was observed from the table-7 that the students of Sindh recorded the highest scores in Science followed by Punjab and NWFP whereas the low scores recorded by Federal Areas and Balochistan respectively. It is interesting to note that except Sindh in all the provinces girls out scored boys in Science. The highest scores i.e. 88 recorded by the urban girls of Punjab whereas the low scores i.e. 52 recorded by the rural boys of Balochistan. It was observed that the urban girls out performed their male counterparts except Sindh. The rural boys of Punjab, Sindh and Federal Areas did better than rural girls whereas rural girls did better than the rural boys in NWFP and Balochistan. The trend indicates that in all the provinces except Sindh girls were performing better as compare to boys. Comparatively the level of performance of urban students was better than rural students. The better performance of girls in science needs to be explored further.

It was emerged that there was a significant difference in the mean scores of Science subject. A significant difference was observed among the provinces in the average percentage scores for boys in Science. There was a significant difference among the

provinces/regions in the average percentage scores for girls in Science. A significant difference was also observed in the average scores of rural and urban students belonging to the different provinces/regions in Science.

Table-8 Average percent score in Mathematics by gender, location and province/region

Province/ Region	Urban			Rural			All areas		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
National	62	62	62	56	52	54	59	57	58
Punjab	70	71	70	63	67	65	66	69	68
Sindh	77	82	80	82	82	82	79	82	81
NWFP	64	53	57	58	51	55	59	52	55
Balochistan	52	44	48	41	44	42	48	44	46
*Federal Areas	47	50	49	41	32	37	44	39	41

* Federal Areas: The scores of students of FANA, FATA, AJK and ICT have been combined.

It was observed from the table-8 that the students of Sindh scored the highest in Mathematics which was followed by Punjab and NWFP but the low scores was recorded by Federal Areas and Balochistan respectively. It was noted that girls in Punjab and Sindh did better than boys in Mathematics whereas in NWFP, Balochistan and Federal Areas the boys did better than the girls. The highest scores i.e. 82% recorded by urban girls of Sindh whereas the low scores i.e. 32% recorded by the rural girls of Federal Areas. Urban girls of Sindh, Punjab and Federal Areas demonstrated higher level of performance than their male counterparts whereas the results were reversed in case of other provinces. In Punjab the rural girls did better than the rural boys whereas in NWFP, Balochistan and Federal Areas the rural boys recorded higher scored than rural girls. In Sindh rural girls and boys obtained the same scores i.e. 82. The trend indicates that in all the provinces except Punjab and Sindh boys out performed girls which needs to be seen in the academic and social development of provinces. It was also noted that the urban students of all the provinces except Sindh did better than their rural counterparts.

It was revealed that there was a significant difference in the overall scores of Mathematics. A significant difference was observed among the provinces in the average percentage scores for boys in Mathematics. A significant difference was also noted among the provinces/regions in the average percentage score for girls in Mathematics. There was a significant difference in the average scores of rural and urban students belonging to the different provinces/regions in Mathematics.

Table-9 Average percent score in Urdu by gender, location and province/region

Province/ Region	Urban			Rural			All areas		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
National	73	79	76	64	71	67	68	75	72
Punjab	80	88	84	76	84	80	78	86	82
Sindh	87	94	91	85	91	88	86	94	90
NWFP	72	65	68	60	74	66	62	71	67
Balochistan	59	69	64	49	67	58	55	68	62
*Federal Areas	65	67	66	54	52	53	58	58	58

* Federal Areas: The score of FANA, FATA, AJK and ICT have been combined.

It was observed from table-9 that the students of Sindh performed better in Urdu followed by Punjab and NWFP whereas the low scores obtained by students of Federal Areas and Balochistan respectively. It was revealed that in all provinces girls performance was better than boys except in Federal Areas where no gender difference was observed. The highest scores i.e. 94 recorded by the urban girls of Sindh whereas the low scores i.e. 49 obtained by rural boys of Balochistan. The trend indicates that in all the provinces girls were the highest achievers in Urdu. It was also noted that urban students did better than rural students. Generally it was observed that all students did better in Urdu particularly the students of Sindh and Punjab who were the highest achievers. The trends indicates differences in provincial profile which needs to be seen in the context of linguistic, social and cultural aspects of provinces\regions.

A significant difference was observed in the mean score of Urdu. A significant

difference was also found among the provinces in the average percentage scores for boys in Urdu. There was a significant difference among the provinces/regions in the average percentage scores for girls in Urdu. A significant difference was also observed in the average scores of rural and urban students belonging to the different provinces/regions in Urdu.

Provincial Students Performance Profile by Gender and Location

PUNJAB

Table-10 Students achievements (in percentage) in Science by gender and location in Punjab

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	80	88	84	80	79	79	80	84	82
Standard Deviation	11	10	11	9	7	8	10	10	10
Maximum	94	100	100	97	91	97	97	100	100
Minimum	46	57	46	54	54	54	46	54	46

It is evident from the table-10 that the overall average percentage score in Science was 82 of which 80 was for boys and 84 for girls. The results indicates that girls out performed boys in Science. The urban, rural boys recorded the same score whereas the urban girls did better than rural girls. It was also observed that the performance of urban students was better than rural students. The minimum standard deviation was recorded for rural girls i.e. 7 which shows that there was less difference in the performance of rural girls and maximum standard deviation was recorded for urban boys i.e. 11 which indicates more variation as compared to rural girls.

A significant difference was observed between the average percentage score of boys and girls in Science . Similarly, a significant difference was also noted between the average score of urban and rural students in Science.

Table-11 Students achievements (in percentage) in Mathematics by gender and location in Punjab

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	70	71	70	63	67	65	66	69	68
Standard Deviation	15	16	15	16	13	15	16	15	15
Maximum	94	100	100	91	94	94	94	100	100
Minimum	26	26	26	26	26	26	26	26	26

It was observed from the table-11 that the overall mean (percentage) score in Mathematics was 68, out of which 66 was for boys and 69 for girls. The results indicates that girls out scored than boys in Mathematics. The score in Mathematics was 70 for urban boys and 63 for rural boys which indicates that the urban boys did better than their rural counterparts. The score of urban girls was 71 and it was 67 for rural girls which shows that the performance of urban girls was better than the rural girls. It was also noted that the urban students out performed their rural counterparts in Mathematics. The standard deviation by gender and location were the same with a slight difference of 3 percent.

It was observed that there was no significant difference between average percentage score of boys and girls but a significant difference between the average percentage score of urban and rural students was noticed in Mathematics.

Table-12 Students achievements (in percentage) in Urdu by gender and location in Punjab

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	80	88	84	76	84	80	78	86	82
Standard Deviation	13	10	13	15	15	15	14	13	14
Maximum	98	100	100	100	98	100	100	100	100
Minimum	42	48	42	40	38	38	40	38	38

It was observed from the table-12 that the over all mean (percentage) score in Urdu was 82 of which 78 for boys and 86 for girls . The results indicate that girls did better than boys. Urban boys recorded 80 and urban girls recorded 88 score which shows that urban girls demonstrated high level of performance as compare to urban boys. Rural girls obtained 84 scores and rural boys got 76 scores which indicates that rural girls did better than rural boys. It is evident from the results that the performance of urban students was better than their rural counterparts. It was also noted that girls recorded the highest scores as compare to boys. Better performance of girls suggests further study to investigate school and family factors. The standard deviation was calculated to assess the degree of variation amongst the boys and girls which indicated no high significant no variation in the performance of boys and girls students.

A significant difference between the average percentage score of boys and girls in Urdu was noted and a significant difference between the average score of urban and rural students in Urdu was also observed.

SINDH

Table-13 Students achievements (in Science) by gender and location in Sindh

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	86	85	85	86	82	85	86	84	85
Standard Deviation	8	11	10	10	10	10	9	11	10
Maximum	100	100	100	97	97	97	100	100	100
Minimum	51	49	49	34	40	34	34	40	34

It is evident from the table-13 that the over all mean (percentage) score in Science was 85 out of which it was 86 for boys and 84 for girls. The results shows that boys out performed girls in Science. The scores of urban and rural boys were same whereas urban girls did better than rural girls. There was no difference in the performance of urban students as compare to their rural counterparts. The minimum standard deviation for urban boys was 8 and maximum standard deviation was 11 for urban girls which indicated less variation in score of urban boys as compare with urban girls.

The results indicated no significant difference in the average percentage score of students by gender and location in Science.

Table-14 Students achievements (in percentage) in Mathematics by gender and location in Sindh

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	77	82	80	82	82	82	79	82	81
Standard Deviation	18	13	15	16	13	15	17	13	15
Maximum	97	100	100	97	97	97	97	100	100
Minimum	14	34	14	11	40	11	11	34	11

It was observed from the table-14 that the overall mean (percentage) score in Mathematics was 81, it was 79 for boys and 82 for girls. The results indicate that girls out performed boys in Mathematics. The urban boys recorded 77 score and rural boys recorded 82 which indicates that rural boys did better than their urban counterparts. The same score i.e. 82 recorded both for urban and rural girls which shows the same performance of both urban and rural girls. It was noted that rural students particularly rural boys out performed urban boys. The standard deviation for gender and location were the same with a slight difference of 3 percent.

A significant difference between average percentage score of boys and girl in Mathematics was noted whereas no significant difference between the average percentage score of urban and rural students was observed in Mathematics.

Table-15 Students achievements (in percentage) in Urdu by gender and location in Sindh

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	87	94	91	85	91	88	86	94	90
Standard Deviation	16	5	11	16	10	14	16	7	13
Maximum	100	100	100	100	100	100	100	100	100
Minimum	33	62	33	4	29	4	4	29	4

It was evident from the table-15 that the total average percentage score in Urdu was 90 of which it was 86 for boys and 94 for girls. The results show that girls did better than boys. Urban boys recorded 87 and rural boys recorded 85 which indicates that the performance of urban boys was better than their rural counterparts. Urban girls obtained 94 score and rural girls got 91 score which indicates that urban girls out performed their rural counterparts. It was observed from the results that the performance of urban students was better than their rural counterparts. It was also noted that the girls performance was better in both the areas (urban & rural) as compared to boys. The minimum standard deviation was 5 for urban girls and maximum standard deviation was 16 for rural boys which indicates that their was less variation in the score of urban girls as compare to urban and rural boys.

The results indicated a significant difference in the level of performence of students by gender and location in Urdu.

NWFP

Table-16 Students achievement (in percentage) in Science by gender and location in NWFP

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	70	73	72	65	71	68	66	72	69
Standard Deviation	13	10	11	13	16	15	13	14	14
Maximum	91	89	91	89	97	97	91	97	97
Minimum	40	37	37	9	20	9	9	20	9

It was observed from the table-16 that the overall mean (percentage) score in Science was 69 of which it was 66 for boys and 72 for girls. The result indicates that girls out performed boys. The score of urban boys was 70 and it was 65 for rural boys which shows that the performance of urban boys was better than rural boys. The urban girls score was 73 and it was 71 for rural girls which shows better performance of urban girls. It was noted from the results that the performance of urban students was better than their rural counterparts. The minimum standard deviation for urban girls was 10 and maximum standard deviation was recorded 16 for rural girls.

The results showed a significant difference in the level of performence of students by gender and location in Science.

Table-17 Students achievements (in Mathematics) by gender and location in NWFP

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	64	53	57	58	51	55	59	52	55
Standard Deviation	13	18	17	18	25	22	17	23	20
Maximum	89	89	89	100	100	100	100	100	100
Minimum	14	20	14	3	11	3	3	11	3

It was observed from the table-17 that the overall mean (percentage) score in Mathematics was 55, it was 59 for boys and 52 for girls. The results indicate that boys out performed girls. Urban boys score was 64 and the rural boys score was 58 which shows that urban boys did better than rural boys. The score of urban girls was 53 and the score of rural girls was 51 which shows urban girls out scored rural girls. It was also noted that urban students did better than their rural counterparts. The minimum standard deviation was 13 for urban boys and maximum standard deviation was 25 for rural girls which shows that the variation in the score of urban boys was less than rural girls.

A significant difference was observed between average percentage score of boys and girls whereas no significant difference between the average percentage score of urban and rural students was noted in Mathematics.

Table-18 Students achievements (in percentage) in Urdu by gender and location in NWFP

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	72	65	68	60	74	66	62	71	67
Standard Deviation	16	25	22	22	18	21	21	21	22
Maximum	94	96	96	98	98	98	98	98	98
Minimum	25	13	13	8	15	8	8	13	8

It was observed from the table-18 that the overall mean (percentage) score in Urdu was 67. It was 62 for boys and 71 for girls. The results indicate that girls did better then boys. Urban boys recorded 72 and rural boys recorded 60 scores in Urdu which shows that the performance of urban boys was better than their rural counterparts. The score of urban girls was 65 and it was 74 for rural girls which indicates that rural girls performance was better than their urban counterparts. The changing pattern in performance of rural girls needs to be explored. The minimum standard deviation was 16 for urban boys and maximum standard deviation was 25 for urban girls which indicates more in the score of urban girls.

The results indicated a significant difference between the average percentage score of boys and girls but no significant difference was observed between the average score of urban and rural students in Urdu.

BALOCHISTAN

Table-19 Students achievements (in percentage) in Science by gender and location in Balochistan

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	68	68	68	52	68	60	62	68	65
Standard Deviation	18	13	16	16	10	16	19	12	16
Maximum	100	89	100	80	97	97	100	97	100
Minimum	6	23	6	6	37	6	6	23	6

It was noted from the table-19 that the overall mean (percentage) score in Science was 65. It was 62 for boys and 68 for girls. The result indicates that girls performance was better than boys. The score of urban boys was 68 and it was 52 for rural boys the difference shows that the performance of urban boys was better than rural boys. The score of urban and rural girls was same. The minimum standard deviation for urban girls was 13 and maximum standard deviation was recorded 18 for urban boys which shows more variation in the score of urban boys than the urban girls.

A significant difference was observed in the level of performance of students by gender and location in Science.

Table-20 Students achievements (in percentage) in Mathematics by gender and location in Balochistan

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	52	44	48	41	44	42	48	44	46
Standard Deviation	22	19	21	23	15	19	23	17	21
Maximum	94	89	94	86	83	86	94	89	94
Minimum	3	3	3	6	9	6	3	3	3

It was observed from the table-20 that the overall mean (percentage) score in Mathematics was 46 out of which 48 was for boys and 44 for girls. The result shows that the performance of boys was better than girls. The score of urban boys was 52 and it was 41 for rural boys which shows that urban boys out scored rural boys. The same scores were recorded for both urban and rural girls. The minimum standard deviation was 15 for rural girls and maximum standard deviation was 23 for rural boys which indicates more variation in the score of rural boys.

A significant difference was observed in the level of performance of students by gender and location in Mathematics.

Table-21 Students achievements (in percentage) in Urdu by gender and location in Balochistan

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	59	69	64	49	67	58	55	68	62
Standard Deviation	26	24	25	23	22	24	25	23	25
Maximum	98	98	98	90	98	98	98	98	98
Minimum	2	2	2	4	8	4	2	2	2

It was noted from the table-21 that the overall mean (percentage) score in Urdu was 62 of what it was 55 for boys and 68 for girls. The results indicate that girls did better then boys. Urban boys recorded 59 and rural boys recorded 49 scores the difference shows that the performance of urban boys was better than rural boys. The score of urban girls was 69 and it was 67 for rural girls which indicates that urban girls out scored rural girls. Both urban boys and girls recorded the highest scores as compare to their rural counterparts. A minimum variation was observed in the standard deviation by gender and location.

A significant difference was observed in the level of performance of students by gender and location in Urdu.

FEDERAL AREAS

Table-22 Students achievements (in percentage) in Science by gender and location in Federal Areas

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	67	71	69	60	54	57	63	60	62
Standard Deviation	17	14	15	22	22	22	20	21	21
Maximum	91	94	94	91	97	97	91	97	97
Minimum	17	31	17	3	6	3	3	6	3

Federal Areas = The scores of students of FANA, FATA, AJK and ICT have been combined.

It was observed from the table-22 that the overall mean (percentage) score in Science was 62 of which, it was 63 for boys and 60 for girls. The result indicates that boys performance was better than girls. The score of urban boys was 67 and it was 60 for rural boys which shows that the performance of urban boys was better than rural boys. The score of urban girls was 71 and the score of rural girls was 54 the difference indicates that urban girls out performed their rural counterparts. It was noted that the performance of urban students was better than their rural counterparts. The minimum standard deviation for urban girls was 14 and maximum standard deviation was recorded 22 for both rural boys and girls.

The results indicated no significant difference between the average percentage score of boys and girls in Science but a significant difference between the average score of urban and rural students was observed in Science.

Table-23 Students achievements (in percentage) in Mathematics by gender and location in Federal Areas

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	47	50	49	41	32	37	44	39	41
Standard Deviation	21	20	20	21	18	20	21	21	21
Maximum	89	83	89	89	83	89	89	83	89
Minimum	3	9	3	3	3	3	3	3	3

It was noted from the table-23 that the overall (percentage) score in Mathematics was 41 out of which, it was 44 for boys and 39 for girls. The result shows that the performance of boys was better than girls. The score of urban boys was 47 and it was 41 for rural boys which shows that urban boys out scored rural boys. The scores of urban girls was 50 and it was 32 for rural girls that indicates the better performance of urban girls over rural girls. It was also noted that urban students did better than their rural counterparts. A slight variation in the standard deviation was noted between the groups.

A significant difference was observed in the level of performance of students by gender and location in Mathematics.

Table-24 Students achievements (in percentage) in Urdu by gender and location in Federal Areas

Descriptive Statistics	Urban			Rural			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Mean	65	67	66	54	52	53	58	58	58
Standard Deviation	23	23	23	27	28	28	26	27	27
Maximum	98	96	98	98	100	100	98	100	100
Minimum	12	10	10	2	2	2	2	2	2

It was observed from the table-24 that the overall mean (percentage) score in Urdu was 58 and it was 58 for both boys and girls. The result indicates the same performance for boys and girls. Urban boys recorded 65 score as compared to rural boys who recorded 54 score which shows that the performance of urban boys was better than rural boys. The score of urban girls was 67 and it was 52 for rural girls which indicates that urban girls out performed their rural counterparts. Both urban boys and girls recorded the highest score as compare to their rural counterparts. A minimum variation was observed in the standard deviation by gender and location.

The results indicated no significant difference between the average percentage score of boys and girls in Urdu but a significant difference between the average score of urban and rural students was observed in Urdu.

Findings and Discussions

The main findings of the study in light of the results are presented in this section. The findings are categorised by subject, gender, and location. The main findings are presented by gender and location at national and provincial levels. The major findings regarding inter-provincial differences in level of performance are also reported in this section. The main results of hypotheses testing are also reported.

Students Performance Profile by Gender and Location at National Level

The total average scores for both Science and Urdu were 72% and for Mathematics it was 58% at national level which indicates better performance of students in Science and Urdu whereas in Mathematics the performance of students was low. It was concluded that students demonstrated high performance in Science and Urdu whereas their performance was low in Mathematics.

The average percentage score in Science for girls was 74% and it was 71% for boys which shows the better level of performance of girls than boys. A significant difference was observed between the scores of boys and girls in Science.

In Mathematics the average percentage score for boys was 59% and it was 57% for girls which indicates that the boys did better than girls in Mathematics at national level. There was no significant difference between the scores of boys and girls in Mathematics.

The average score in Urdu for girls was 75% and it was 68% for boys which shows that girls out scored boys at national level. A significant difference was observed between the scores of boys and girls in Urdu.

The average percentage score in Science for urban boys was 75% and it was 68% for rural boys which indicates better performance of urban boys over rural boys. The average percentage score of urban girls was 78% and it was 69% for rural girls which shows that urban girls out performed their rural counterparts in Science at national level. The total score of urban students was 76% whereas it was 69% for rural students in science. A

significant difference was observed between the scores of urban and rural students in Science. It was concluded that urban students out performed their rural counterparts in Science at national level.

The average percentage score in Mathematics for urban boys was 62% and it was 56% for rural boys which indicates better performance of urban boys over the rural boys. The average percentage score for urban girls was 62% and it was 52% for rural girls which shows that urban girls out performed rural girls. The total score of urban students was 62% whereas it was 54% for rural students in Mathematics. A significant difference was observed between the scores of urban and rural students in Mathematics. It was inferred that urban students out performed their rural counterparts in Mathematics.

The average percentage score in Urdu for urban boys was 73% and it was 64% for rural boys which shows that urban boys did better than rural boys. The average percentage score was 79% for urban girls and 71% for rural girls which indicates that urban girls were the high achievers in Urdu. The total score of urban students was 76% whereas it was 67% for rural students in Urdu. A significant difference was observed between the scores of urban and rural students in Urdu. It was concluded that urban students did better than their rural counterparts in Urdu at national level.

The trends emerge from the findings that the performance of students in Urdu and Science was better than in Mathematics at national level. In Science and Urdu girls out performed boys whereas in Mathematics boys out performed girls. Urban students out performed their rural counterparts in all subjects at national level. These unusual trend in the performance of girls and boys suggests new dimensions in society. The findings need to be explored in the context of difficulty of mathematics test, poor teaching of mathematics and high ability children do not attending public schools.

Inter-Provincial Comparision of Mean (percentage) Score in each Subject by Gender, and Location

The students of Sindh recorded the highest score in Science followed by Punjab and NWFP, whereas low scores recorded by Federal Areas and Balochistan respectively. In all provinces except Sindh and Federal Areas girls out scored boys in Science. The highest scores i.e. 88% was recorded by urban girls of Punjab whereas the lowest scores i.e. 52% was recorded in case of rural boys of Balochistan. In all the provinces urban students did better than their rural counterparts in Science. The students from all the provinces did better in Science. A significant difference was observed in the average score of students among the provinces by gender and location in Science.

The students of Sindh recorded the highest scores in Mathematics followed by Punjab and NWFP whereas low scores recorded by Federal Areas and Balochistan respectively. Girls in Punjab and Sindh out performed boys in Mathematics whereas in NWFP, Balochistan and Federal Areas boys out performed the girls. The highest scores i.e. 82% recorded by urban girls and rural boys and girls of Sindh whereas the lowest scores i.e. 32% recorded in case of rural girls of Federal areas in Mathematics. The students of Sindh were higher achievers whereas students of Balochistan and Federal Areas particularly rural girls of Federal Areas were low achievers in Mathematics. The trend indicates that in all the provinces except Punjab and Sindh boys out performed girls. These results need to be seen in the context of social development in the provinces. Urban students of all the provinces except Sindh did better than their rural counterparts in Mathematics. A significant difference was found in the average score of students among the provinces by gender and location in Mathematics.

The students of Sindh recorded the highest score in Urdu followed by Punjab and NWFP whereas low scores recorded by students of Federal Areas and Balochistan respectively. In all provinces girls out performed boys in Urdu except in Federal Areas where no gender difference was observed. The highest scores i.e. 94% recorded by urban girls of Sindh whereas low scores i.e. 49% recorded by rural boys of Balochistan. In most cases the urban girls out performed their male counterparts. Even rural girls did better than rural boys in all the provinces/region except Federal Areas where the trend was reversed. The trend indicates that in all the provinces girls were the highest achievers. It was also noted that the

urban students did better than rural students. Generally it was observed that all students did better in Urdu particularly the students of Sindh and Punjab who were the highest achievers in Urdu. A significant difference was observed in the average score of students among the provinces by gender and location in Urdu. The results may be seen keeping in view the language barrier in other provinces.

The trend emerged from the findings that the students of Sindh ranked at the highest score level in all subjects followed by Punjab and NWFP whereas the students of Federal Areas and Balochistan consistently ranked at the lowest score level in all subjects. Girls out performed boys in all subjects except Mathematics in all the provinces. In Mathematics girls also out scored boys in Sindh and Punjab whereas in NWFP, Balochistan and Federal Areas boys out performed girls. In all the provinces/regions urban students did better than rural students in all subjects. The trends further indicate that the students of Federal Areas and Balochistan were consistently the low achievers in all subjects as compare to other provinces.

Provincial Students Performance Profile by Gender and Location

PUNJAB

The total average percentage score in Science was 82%, and for girls it was 84% and for boy it was 80%. Girls out performed boys in Science. Urban and rural boys recorded the same score whereas urban girls did better than rural counterparts. The performance of urban students were better than rural students in Science. A significant difference was observed in the average score of students by gender and location in Science.

The total average percentage score in Mathematics was 68%, it was 69% for girls and 66% for Boys. The results indicates that girls out scored boys in Mathematics. The unusual trend needs to be explored in the context of socio-economic and schools factors. The score in Mathematics was 70% for urban boys and 63% for rural boys. The urban boys did better than their rural counterparts. The performance of urban girls was better than rural girls. Urban students out performed their rural counterparts in Mathematics. There was a significant

difference in the average score of students by gender and location in Mathematics.

The total average percentage score in Urdu was 82%, it was 86% for girls and 78% for boys. Girls did better than boys in Urdu. Urban girls demonstrated high level of performance than urban boys in Urdu. Rural girls did better than rural boys in Urdu. The performance of urban students was better than their rural counterparts in Urdu. A significant difference was also noticed in the average score of students by gender and location in Urdu.

SINDH

The total average percentage score in Science was 85%, it was 86% for boys and 84% for girls. Boys out performed girls in Science. The scores of urban and rural boys were same whereas urban girls did better than rural girls in Science. The results indicated no significant difference by gender whereas significant difference was observed by location in science.

The total average percentage score in Mathematics was 81%, it was 82% for girls and 79% for boys. Girls out performed boys in Mathematics. Rural boys did better than their urban counterparts. Rural students particularly rural boys out performed urban boys in Mathematics. It was noted that there was a significant difference between average percentage score of boys and girls but no significant difference was observed between the average percentage score of urban students and rural students in Mathematics. These trends need to be seen in the context of popularity of private schools in urban areas. In rural there are very few private schools, therefore, the families have no choice except to send their children in public schools.

The total average percentage score in Urdu was 90%, and it was 94% for girls and 86% for boys . Girls did better than boys in Urdu. The performance of urban boys was better than their rural counterparts in Urdu. Rural girls out performed their urban counterparts in Urdu. The performance of urban students was better than their rural counterparts in Urdu. A significant difference was observed in the performance of students by gender and location in Urdu.

Generally it was observed that girls are the highest achievers in Urdu. It may be concluded that the students of Sindh did better in all subjects. The high achievers were the girls in all subjects. There was a marginal difference between the performance of urban and rural students.

NWFP

The total average percentage score in Science was 69%, it was 72% for girls and 66% for boys. Girls out performed boys in Science. The performance of urban boys was better than rural boys and urban girls did better than the their rural counterparts. The performance of urban students was better than their rural counterparts in Science. A significant difference was observed in the performance of students by gender and location in Science.

The total average percentage score in Mathematics was 55%, it was 59% for boys and 52% for girls. Boys out performed girls in Mathematics. Urban boys did better than urban girls and rural boys out scored rural girls in Mathematics. It was also noted that urban boys and girls did better than their rural counterparts. A significant difference was observed in the performance of students by gender but no significant difference was noticed in the performance of students by location in Mathematics.

The total average percentage score in Urdu was 67%, it was 71% for girls and 62% for boys. Girls did better then boys in Urdu. The performance of urban boys was better than their rural counterparts but rural girls out scored their urban counterparts in Urdu. A significant difference was observed in the performance of students by gender but no significant difference was noticed in the performance of students by location in Urdu.

BALOCHISTAN

The total average percentage score in Science was 65%, it was 68% for girls and 62% for boys. Girls performance was better than boys in Science. The level of performance of urban boys was better than rural boys. Urban and rural girls got same score in Science. A significant difference was observed in the performance of students by gender and

location in Science.

The total average percentage score in Mathematics was 46%, it was 48% for boys and 44% for girls. The level of performance of boys was better than girls in Mathematics. Urban boys out scored urban girls but the performance of rural girls was better than rural boys in Mathematics. Urban boys and girls did better than their rural counterparts in Mathematics. A significant difference was observed in the performance of students by gender and location in Mathematics.

The total average percentage score in Urdu was 62%, it was 68% for girls and 55% for boys. Girls did better than boys in Urdu. The level of performance of urban boys was better than rural boys and urban girls also out scored rural girls in Urdu. Urban students recorded the highest score as compare to their rural counterparts in Urdu. A significant difference was observed in the performance of students by gender and location in Urdu.

FEDERAL AREAS

The total average percentage score in Science was 62%, it was 63% for boys and 60% for girls. Boys performance was better than girls in Science. The performance of urban boys was better than rural boys and urban girls out performed their rural counterparts in Science. It was noted that the performance of urban students was better than their rural counterparts in Science. No significant difference was observed in the performance of students by gender but significant difference was noticed in the performance of students by location in Science.

The total average percentage score in Mathematics was 41%, it was 44% for boys and 39% for girls. The performance of boys was better than girls in Mathematics. The urban boys out scored rural boys and the performance of urban girls was better than the rural girls in Mathematics. It was also noted that the urban students did better than their rural counterparts in Mathematics. A significant difference was observed in the performance of students by gender and location in Mathematics.

The total average percentage score in Urdu was 58% and it was same for both

boys and girls. Same level of performance for boys and girls was observed in Urdu. The performance of urban boys was better than rural boys and urban girls out performed their rural counterparts in Urdu. Urban students recorded better score as compare to their rural counterparts in Urdu. No significant difference was observed in the performance of students by gender but significant difference was noticed in the performance of students by location in Urdu.[1]

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[1] Federal Areas = The scores of students of FANA, FATA, AJK and ICT have been combined.

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APPENDIX

Appendix-1

List of Districts

Province: Punjab

S.No.	Name of district
1.	Rawalpindi
2.	Sargodha
3.	Faisalabad
4.	Lahore
5.	Sahiwal
6.	Rajanpur
7.	Bahawalnagar

Province: Sindh

S.No.	Name of district
1.	Karachi (Central)
2.	Larkana
3.	Sanghar
4.	Noshero Feroze

Province: NWFP

S.No.	Name of district
1.	Swat
2.	Abbottabad
3.	Peshawar
4.	Bannu
5.	Charsadda

Province: Balochistan

S.No.	Name of district
1.	Quetta
2.	Zhob
3.	Sibi
4.	Jaffarabad
5.	Mastung

Regions: FANA

S.No.	Name of district
1.	Skardu
2.	Gilgit

Regions: FATA

S.No.	Name of agency
1.	Khyber Agency
2.	Mehmand Agency

Regions: AJK

S.No.	Name of district
1.	Muzaffarabad
2.	Bagh

Regions: ICT, Islamabad

District:	Rawalpindi
S.No	Name of School
1.	Govt. Girls Primary School More Kala Khan, Rawalpindi.
2.	Govt. Girls Primary School, Rani, Rawalpindi.
3.	Govt. Primary School Kalian Awan, Rawalpindi.
4.	Govt. Primary School Westridge, Rawalpindi.
District:	**Sargodha**
1.	Govt. Elementary School No. 135 Northern Centre Sianwali Sargodha.
2.	Govt. Girls Primary School Kot Farid, Sargodha.
3.	Govt. Girls Primary School Shaheen Abad, Sargodha
4.	Govt. Primary School Chak No. 49 North Sargodha
District:	**Faisalabad**
1.	Govt. Girls Primary School No. 2 Garh Faisalabad
2.	Govt. Girls Primary School No.2, Dajkot, Faisalabad
3.	Govt. Primary School 203 RB Malik Pur, Faisalabad
4.	Govt. Primary School Chak No. 205 GB, Faisalabad
District:	**Lahore**
1.	Govt. Girls Primary School Bhubhtian, Lahore
2.	Govt Model Girls Primary School Shad Bagh Lahore
3.	Govt. Primary School Dhair Shahdra, Lahore
4.	Govt. Primary School Sadhoki, Lahore
District:	**Sahiwal**
1.	Govt. Faiz Alam Primary School, Sahiwal
2.	G.G. Primary School 9/11 Bambai, Sahiwal
3.	G.G. Primary School Pakpattan Sahiwal
4.	G. Primary School 7/11-2 Lahorianwala Sahiwal
District:	**Rajanpur**
1.	Govt. Boys Primary School Kenal Colony Rajanpur
2.	Govt Boys Primary School Rustam Laghari Rajanpur

3.	Govt. Girls Primary School No. 3, Rajanpur.
4.	Govt. Girls Primary School No.2, Dajal Rajanpur
District:	**Bahawalnagar**
1.	Govt. Boys Primary School 172/M Chastani Bahawalnagar
2.	Govt. Boys Primary School Farooq Abad Bahawalnagar
3.	Govt. Girls Primary School Chak No.168 MR Bahawalnaga
4.	Govt. Girls Primary School Farooq Abad Bahawalnagar

Province: Sindh

S.No	**Name of School**
District:	**Karachi (Central)**
1.	Alzuhra Govt Girls Primary School Firdus Colony Nazimabad, Karachi
2.	Govt. Girls Primary School 15 A Baffar Zone Sector 5A/3 North Karachi
3.	Govt. Girls Primary School Nazimabad No.1, Karachi
4.	Govt. Karachi English Primary School Nazimabad No.5, Karachi.
5.	Govt. Primary School Madem Montesory School Nazimabad Karachi
6.	Happy Deal Govt. Boys Primary School Nazimabad Karachi
7.	Hassan Vellage Girls Primary School Nazimabad No.3, Karachi.
8.	Nazim Abad english G.B.P.S. V.C.5 Nazimabad Karachi
District:	**Larkana**
1.	G.G.P. School, Sheikh Zaid Colony, Larkana
2.	G. Primary School, P.V. Sindhi, Larkana
3.	G.G. Primary School P.V., Near Shah Nawaz Park, Larkana
4.	G.G.P. SchoolDhamraha, Larkana
5.	Govt. Primary School, Dhamara II, Larkana
6.	Primary School Beru Chandio, Larkana
District:	**Sanghar**
1.	Deh No. 22 (B), Sanghar
2.	Ghulam Rasul Zardary, Sanghar
3.	Govt. Boys Primary School Curricuiy, Sanghar
4.	Govt. Girls Primary School Chak 10, Sanghar
5.	Govt. Primary Girls School Housing society, Sanghar
6.	Govt. Urdu Main Primary School Tando Adam, Sanghar

2.	Govt. Primary School Ghari Wala No.1, Bannu
3.	Govt. Primary School Khawja amad Landi Dak, Bannu
4.	Govt. Primary School No.7 City Bannu
District:	**Peshawar**
1.	Govt. Girls Primary School Kagawala No.2, Peshawar
2.	Govt. girls Primary School Railway QuarterNo.1, Peshawar
3.	Govt. Girls Primary School Wadagga, Peshawar
4.	Govt. Primary School No.1, Nahaqi, Peshawar
5.	Govt. Primary School Badber No.1, Peshawar
6.	Govt. Primary School Railway Quarter, Peshawar

Province: Balochistan

S.No	**Name of School**
District:	**Sibi**
1.	G.G. Model School Dhipal Kallan, Sibbi
2.	G.G. Primary School Police Line, Sibbi
3.	G.G. Model School Dhayl Kallan, Sibbi
4.	G.P. Masjid School Police Line, Sibbi
5.	G. Primary Khizar School Railway Colony, Sibbi
6.	G.G. Primary School Allah Abad, Sibi
7.	Govt. High School Railway Colony, Sibi
8.	Govt. Primary School Zunoor, Sibbi
9.	Railway Carriage Primary School, Sibbi
District:	**Quetta**
1.	G.P. School Killi Ismail, Quetta
2.	G.P. School Kili Malik Abdul Ali, Quetta.
3.	G.G. Middle School Hazara Town, Quetta
4.	G.G. Primary School Balochi Street, Quetta
5.	G.G. Primary School Kali Shabu, Quetta
6.	G.G. Primary School Kali Shadi, Quetta
7.	Govt. Primary School Kali Dadshah, Quetta
District:	**Zhob**
1.	G.G. Primary School Babu Moh, Zhob

2.	G.G. Primary School city Branch, Zhob
3.	G.G. Primary School Milisha, Zhob
4.	G.G. Primary School, Kali Appozai, Zhob
5.	Govt. Primary School Gazerkhan Wala Akram, Zhob
6.	Govt. Primary School Sherani Moh. No.1, Zhob
District:	**Mastung**
1.	Govt Boys Primary School Hindu Muhallah, Mastung
2.	G.G. Middle School Shamsabad, Mastung
3.	G.G. Middle Scool Walli Khan, Mastung
4.	G.G. Public High School, Mastung
5.	Govt. Middle School Shamsabad, Mastung
District:	**Jaffarabad**
1.	G.G. Primary School Sher Dill Colony, Jaffarabad
2.	G. P. G. School Shaheed Murad Colony, Dera Allah Yar, Jaffarabad
3.	Govt. Primary School Faqeer Ghulam Muhammad, Jafarabad
4.	Govt. Primary School Shaheed Murad Colony, Jafarabad

Islamabad

S.No	Name of School
1.	F.G. Girls Primary School Kot Heathial, Islamabad
2.	F.G.P. Boys Primary School Gelanhi, Islamabad
3.	F.G.P. School No.28, Islamabad
4.	F.G.P. School No. 33, Islamabad
5.	F.G.P. School Mul Pur, Islamabad
6.	Govt. Girls Primary School Gelanhi, Islamabad

FATA

S.No	Name of School
Mohmand Agency	
1.	G.B.H. School Daryab, Mohmand Agency
2.	G.G.H. School ghulnai, Mohmand Agency
3.	G.G.H. School Subhan, Mohmand Agency
4.	G.P. School Gul Jan, Mohmand Agency

Khyber Agency	
1.	G.G. Middle School Sarfraz Killay, Khyber Agency
2.	G.G. Primary School Ameer Khan Killay, Khyber Agency
3.	G. Primary School Haji Shera Khan, Khyber Agency
4.	G. Primary School, Jamrood2, Khyber Agency

FANA

S.No	**Name of School**
District:	**Gilgit**
1.	D.J. Girls High School Sonikotm,Gilgit
2.	F.G.B. High School Bean Bala, Gilgit
3.	G.Girls Middle School Minot, Gilgit
4.	G.Girls Middle School Janglot, Gilgit
5.	G.M. School Jagar Bean, Gilgit
District:	**Skardu**
1.	G.B.P. School Choomae, Skardu
2.	G.G. School Skimdan, Skardu
3.	G.P. School Dhaari, Skardu
4.	M. School Kumrah, Skardu

AJK

S.No	**Name of School**
District:	**Bagh**
1.	Govt. Boys Middle School Nuaman Pura, Bagh
2.	Govt. Boys Pilot High School, Bagh
3.	Govt. Girls Middle School Bhont Bhalian, Bagh
4.	Govt. Girls Pilot High School, Bagh
District:	**Muzaffarabad**
1.	Govt. Boys High School Miani Bandi, Muzaffarabad
2.	Govt. Boys Middle School Lohar Galli, Muzaffarabad
3.	Govt. Girls Middle School Kardella, Muzaffarabad
4.	Govt. Girls Primary School Dheri Seyedan, Muzaffarabad
5.	Govt. Girls Primary School Sethi Bagh, Muzaffarabad