

**THE IMPACT OF THE PRIMARY EDUCATION PROJECT
IN STUDENTS' ACHIEVEMENT, SUPERVISION AND TEACHING PRACTICES
IN THE NORTH WEST FRONTIER PROVINCE, PAKISTAN**

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The objective of this paper¹ is to examine the impact of the Primary Education Project II in NWFP. Specifically I will discuss the effects of the project in students' achievement, pattern of supervision and teaching practices.

Background of the Primary Education Project:

The Government of Pakistan with the assistance of the International Development Association (IDA) of the World Bank launched an experimental primary education project (1979-85) in the four provinces of the country.

The project areas were selected on the basis of the density of population and participation rate (high and low) and one tehsil from each of the then four administrative divisions. The areas in which the project would take place are shown in table 1.

Table-1

Tehsil included in primary Education Project
(Experimental Phase) by Division

<u>Division</u>	<u>No. of District in Divisions</u>	<u>District where Project Tehsil Located</u>	<u>Name of Project Tehsil</u>
Hazara	3	Abbottabad	Abbottabad
Peshawar	4	Mardan	Swabi
Malakand	4	Swat	Daggar
D.I. Khan	2	D.I.Khan	D.I. Khan

The objectives of the project were to:

- a) increase enrolment particularly of girls in rural area
- b) improve the quality of education
- c) reduce wastage, dropout and repetition
- d) reduce unit costs.

Based on the positive outcomes of the experimental project, the Government of Pakistan with the assistance of the IDA launched a development follow-on project "Primary Education Development and Expansion Project" popularly known as Primary Education Project-II in the provinces of Balochistan, NWFP and Sindh.

The size of the project in terms of area, financial

allocations and inputs in six districts is large enough to cover 40% of the schools in the North West Frontier Province.

The districts of the Tehsils participating in the experimental phase were included in the project, due to the creation of Kohat Division, Kohat District was included in the project as well. Mardan District was bifurcated into two districts (Mardan and Swabi) and both were included in the project making a total of six districts in the project area.

The primary education project-II, in NWFP, provides support to the education department in the six project district for the achievement of the following objectives:

- a) to increase student achievement
- b) to improve teachers effectiveness and quality of instruction
- c) to improve participation rate
- d) to reduce dropout rate to a significant level
- e) to find low-cost solution to achieve these objectives
- f) to institutionalize project activities within the education system.

**Note: For background information of education department NWFP
See Appendix A.**

The following table will show the percentage of the project coverage in the over all primary education sector.

Table-2

Coverage Being Provided by the Primary Education Project
as a percentage of over all primary education in NWFP

	No. of Institutions providing Education for Class 1-V									
	Male			Female						
	Elem.	Mosq.	Pry.	LM.	Mid	Total	Pry.	Mid	Total	G.Total
NWFP	155	3477	6597	8	583	10820	3051	142	3193	14013
PROJ-II	64	1542	2934	2	217	4813	1478	57	1535	6348
As % of NWFP	41	44	44	25	46	44	48	40	48	45

Source - Year Book Education Statistics 1988-89 (Directorate of Education (Schools) NWFP)

Elem: = Elementary School (class 1-4 or 5)

Mosq: = Mosque School (class 1-4 or 5)

Pry: = Primary School (class 1-5 or 4)

L.M. = Lower Middle School (Class 1-6)

Mid: = Middle School (class 1-8)

Data Collection and National Results:

The data on which the analysis reported in this paper are based come from a national sample survey of primary schools in Pakistan carried out by Project BRIDGES of Harvard University in collaboration with the Academy of Educational Planning and Management of the Federal Ministry of Education in December 1988 and January 1989. The author of this paper was the coordinator of

this study for the North West Frontier Province. The survey covered 473 primary schools and over 900 teachers were interviewed to collect information on a number of questions related to primary education in Pakistan. The design made use of random sampling applied first to districts and then to schools. The interviewers visited each school, interviewed the headmaster and teachers (principally those directly involved in teaching maths and science to classes IV and V) administered 4 tests of 50 items each in Mathematics and Science to students of IV and V classes, the 50 items tests were based in the official curriculum and were developed by the primary and Non Formal Education Wing of the Ministry of Education in collaboration with the Primary Education Project. In NWFP the tests were administered in Pushto in the Pushto speaking schools and in Urdu in non Pushto Speaking Schools.

Using a separate identification number for each teacher and assigning that same number to the achievement tests of the students taught by each teacher it was possible to link the score obtained by every class of children (average of the individual scores of all students in that class) and their particular teachers.

Identification of Project Area:

There were two sources of information to establish whether a particular school was a 'project school'

- 1) In the interview to teachers we asked them if the school had participated in the Primary Education

Project.

- 2) The second way of identifying the project schools is by identifying whether the school is located in one of the districts under the primary education project II. The districts declared as project districts in the three participating provinces of Balochistan, NWFP, and Sindh are:

Balochistan	N.W.F.P	Sindh
Quetta	Abbottabad	Sukkur
Pashin	Mardan	Jaccobabad
Chaghai	Swat	Khairpur
Lasbella	Kohat	Sanghar
Jaffarabad	Swabi	Nawabshah
Turbat	D.I. Khan	Dadu
Tambo		Tharaparkar
		Thatha

I cross-checked the answers of the teachers with the project districts. In NWFP there was almost perfect agreement in the identification of project schools from both sources. 78 of the 81 teachers in project districts reported their school as a project school, only 3 teachers in project districts said that their school was not a project school. None of the teachers in the non project districts reported their school as a project school. In other provinces the agreement between these two sources of identification was smaller.

For the national data reported in this paper only the classes in which there was agreement between the answer of the teacher and the type of districts were included in the sample. Most of the data reported in this paper, however, are a subsample of the total study and refer to all classes in NWFP in the survey. Since there was high consistency between the designation of the districts as project and non project and the information provided by the teacher on whether his or her school was a project school or not we used district as a way to identify the project schools.

In NWFP the survey sample of 80 schools was distributed as follows:-

Table 3

Sample Schools for AEPAN BRIDGES National Survey in NWFP

District	Male Schools	Female Schools	Total	Project/Non Project
Peshawar	12	8	20	Non-Project
Bannu	12	8	20	Non-Project
Swat	12	8	20	Project
Mardan	12	8	20	Project

In NWFP the survey was conducted by a team of learning coordinators, headmistress and Deputy District Education Officer Female.

The AEPAM - BRIDGES National Primary School Survey was conducted by five teams consisting of four person each. There were two female and three male teams. The teams were made mobile and they reached the schools well in time. Only in a few cases did they have to walk. They worked under the close supervision of the provincial coordinator and assistant coordinator.

The interviewers were very well received in the school. The teachers and the officers which they interviewed gave them full cooperation.

One additional school male and one female were selected in the sample as alternate schools in case of unforeseen events such as closure of the school. All the originally selected schools were surveyed except one school which was replaced by the alternate school selected.

The Provincial Coordinator, Assistant Coordinators and Interviewers met every evening to discuss the day's performance and next day's programme.

The data collection/interviews started on 10.12.1988 in District Swat and concluded on 26.1.1989 in District Bannu.

This paper is structured in the following sections

- a) Students achievement in Project/Non-project Areas
- b) Supervision in Project/Non Project area.

- c) Classroom practices in Project/Non Project Areas
- d) Conclusions, Interpretation and implications for policy and Research.

Students Achievement in the Project and Non Project Classes:

The students' of class 4 and 5 in the sample schools were given curriculum based achievement test in Maths and Science.

The average class achievement in NWFP in the four test is summarized in the table 4:

Table 4
Average Achievement Score of the Students in NWFP

Subject/Class	Scores
Math 4	14.89
Math 5	12.90
Science4	15.09
Science5	16.29

Table 5 summarizes the average achievement of students in Project and Non Project schools in NWFP.

Table 5 shows that although the scores of the students are higher in the project areas schools than in the non project area schools, this difference is not statistically significant in most tests. Only for science students in class IV is the difference

statistically significant.

Table-5
Test Scores in Maths and Science in Project
and Non Project School

<u>Class</u>	<u>Subject</u>	<u>Project Area</u>	<u>Non Project Area</u>	<u>Significance</u> <u>of the</u> <u>differences</u>
4th	Maths	15.75	14.18	NS
5th	Maths	13.67	12.18	NS
4th	Science	17.11	13.32	.005
5th	Science	17.22	15.41	NS

At the National Level¹ the scores of the project schools are higher than the scores of the non project schools except science class 5 which is higher in non project schools than the project schools. The differences are not statistically significant.

Table 6
Test Scores National Project/Non Project

<u>Class</u>	<u>Subject</u>	<u>Project</u>	<u>Non Project</u>	<u>Significance</u>
4th	Maths	14.17	11.99	.059
5th	Maths	12.88	12.75	.90
4th	Science	15.81	14.20	.106
5th	Science	16.02	16.82	.48

¹ For this analysis I included only the classes in which there was agreement between the answer of the teacher as to whether this was a project school or not and the identification of the district.

If the scores of N.W.F.P are compared with the National mean of student achievement NWFP is higher in all subjects in the project schools as can be seen in the comparing tables 5 and 6.

It is worth mentioning that the scores of non project schools in Sindh are higher than the project schools in Sindh. When the scores of N.W.F.P. are compared with the scores of non project school of Sindh maths and science class 4 are higher than in Sindh whereas Maths and Science class 5 are lower than Sindh. This is probably due to the fact that Karachi, which is a sample district is a non project district. The Survey sample includes the provincial capitals as one of their sample districts and most of these districts are non project district.

To summarize, there is only limited impact of the project in student achievement as measured by the curriculum based tests developed by the P.N.E. Wing in collaboration with the World Bank. The only subject in which project schools show significantly higher results is science in class 4.

I now examine whether the same pattern is observed when we compare project and non project schools in NWFP separately for urban rural schools and male female schools and schools where the

children had had experience with multiple option tests and the schools where they have not had such experience.

There are no significant differences between the average achievement in the project and non project schools for schools in which the children have had experience with multiple option tests. In schools in which children have not had experience with multiple option tests students in project schools have significantly higher achievement than the students in non project schools in science 4 and science 5, but not in Maths. This can be seen in table 7.

Table 7

Students Achievement with no test experience and with test experience in the project and non project schools.

Subject Class	With no test experience			With test experience		
	Project	N.Project	Sig.	Project	N.Project	Sig.
Math4	17.53	18.81	NS	14.74	12.72	NS
Math 5	14.27	12.18	NS	13.42	12.17	NS
Science4	20.26	13.13	.0017	15.46	13.80	NS
Science5	18.44	13.59	.0651	16.59	18.75	NS

In urban schools , there are no significant differences between project and non project schools in any of the subjects. In rural schools, however, children in project schools show significantly higher scores than the children in non-project schools. This can be seen in table 8:

Table 8

Student Achievement by Urban/Rural Schools in the
Project and Non Project Schools in NWFP

Subject Class	Urban Schools			Rural Schools		
	Project	N.Project	Sig.	Project	N.Project	Sig.
Math4	11.59	15.23	NS	16.92	13.71	.0119
Math 5	11.31	13.33	NS	14.70	11.43	.0203
Science4	15.32	15.46	NS	17.58	12.60	.0003
Science5	18.37	19.92	NS	17.62	13.81	.0284

When we examined the difference between project and non project schools separately for male and female schools (Table 9) we see no significant differences between project and non project female schools, but highly significant differences in the male schools, of which the project schools have higher achievement in all subjects.

Table 9
Achievement of Male and Female Student
in the Project and Non Project

Subject Class	Male schools			Female Schools		
	Project	N.Project	Sig.	Project	N.Project	Sig.
Math4	18.00	14.54	.0125	12.70	13.70	NS
Math 5	15.48	12.28	.0155	10.96	12.08	NS
Science4	18.23	12.23	.0003	15.42	14.78	NS
Science5	17.70	11.80	.0002	16.31	19.22	NS

Finally I examined the difference in student achievement between project and non project rural schools separately for male and female teachers and found no significant differences between project and non project female schools, but significant differences between project and non project for male schools as summarized in the following table 18.

Table 10
Students Achievement in Rural Male and Female Project Non Project schools

Subject Class	Male		Female	
	Project	Non.Project	Project	Non.Project
Math 4	18.04	14.44	13.52	12.68
Math 5	15.59	12.12	11.11	10.50
Science 4	18.46	12.17	15.29	13.79
Science 5	17.86	11.54	15.16	17.19

To summarize, for NWFP there are no significant differences in the achievement of students in project and non project schools in all subjects except science 4 (Project schools score higher).

Controlling for test experience of children urban/rural and gender of the teacher we found significant differences in science

but not in maths between project and non project schools in which children had not had experience with tests. There was no difference in schools in which children had had test experience. Students of project schools achieve significantly higher than students of non project schools in all subjects in rural schools and male schools but not in urban schools or female schools. We also examined the differences between project and non project separately for rural male and female teachers and found significant effects in male schools but not in female schools.

In sum, the Primary Education Project has had a significant impact in the achievement of children in rural schools taught by male teachers.

The next two sections will examine the effects of the Primary Education Project in supervision in teaching practices both for NWFP as a whole and for rural male schools in the province as an attempt to explain these differences in achievement.

We now examine whether there are differences in the supervision and practices of teachers in project and non project schools.

Pattern of Supervision in Project and Non Project Classes:

The next section examines the differences in frequency of supervision between project and non project schools. The survey asked for the number of visits from the District Education Officer (DEO) Sub Divisional Education Officer (SDEO), Assistant Sub Divisional Education Officer (ASDEO) and Learning Coordinator (LC) during the school year.

Table 11, shows the average number of visits per year made by different types of supervisor in the project and non project schools.

Table-11

Average (mean) visit per year by Supervisors to Project and Non-Project Schools in NWFP

<u>Types of Supervisor</u>	<u>Means visits per year</u>		<u>Significance</u>
	<u>Project School</u>	<u>Non Project School</u>	
DEO	1.33	.88	.11
SDEO	1.85	1.78	N.S.
ASDEO	2.67	1.54	.0001
L.C.	5.69	3.41	.04

The administrative and supervisory staff has made more visits in the project schools than in the non-project schools. The difference between the visits of the District Education Officers to project and non project schools is not statistically significant and visits of Sub Divisional Education Officers to both types of schools are the same on average.

The most significant difference is between the visits of the Assistant Sub Divisional Education Officer and Learning Coordinator to the Project and Non Project Schools, in both cases the average number of visits is higher in the project schools. The difference in visits by Assistant Sub Divisional Education Officers can be attributed to the transport provided by the project to the learning coordinators which is shared by Assistant Sub Divisional Education officers in the female sector.

In the interview we asked the teachers if they had learned any new teaching methods from the learning coordinators. 91% of the teachers in the project and 77% in the non-project area said that they had learned new methods of teaching from the learning coordinator and Assistant Sub Divisional Education officer. This difference was statistically significant.

Under the primary education project the Learning Coordinator has a pivotal role. He has been assigned a number of duties out of which the most important is on-the-job training of the Primary School teachers. More frequent visits to the schools give him time for this purpose. According to his programme he has to spend one full day in a school and has to visit all schools assigned to him at least once a month. During the visit he has to spend almost all of his time on the professional work in the school.

Since we have seen that the Primary Education Project had a larger impact in rural schools and especially in rural male

teachers, we here examine whether there are significant differences in the pattern of supervision between project and non project schools in rural areas, and separately in schools of male and female teachers. The results are summarized in the following table:

Table 12

Average (Mean) Visit Per Year By Supervisors to the Rural Male and Female Schools in the Project & Non Project Districts

Types of Supervisors	Male Schools			Female Schools.		
	Project	N.Project	Sig.	Project	Non.Project	Sig.
DEO	1.33	0.93	NS	1.33	0.75	NS
SDEO	1.33	1.39	NS	3.00	1.83	NS
ASDEO	2.72	1.68	.0056	1.75	1.33	NS
LC	5.50	4.04	NS	6.93	0.50	NS

Table 12 shows that there are more visits of ASDEO and Learning Coordinator between the project and non project schools. The difference is significant in male schools for visits of the ASDEO. We might mention that the large difference in the average number of visits of female learning coordinator to project and non project might not be significant probably due to the small number of cases. There is also a significant difference in the percentage of all teachers in NWFP who report Learning new methods of teaching as an effect of these visits between project and non project school. Proportionately more teachers in the

project schools reply that they have learned new methods from the learning coordinators than in the non project schools.

I have examined the impact on student achievement of those categories of supervision on which project schools differed significantly from non project schools. For all teachers of NWFP there is no significant correlation between the number of visits of the ASDEO and of the LC and student achievement in any of the subjects. The same was true for rural male schools.

However, the students of the teachers who replied that they had learned new methods from the LC had higher achievement scores than the students of the teachers who replied that they had not learned new methods from the LC's, this difference is statistically significant in S5 and borderline in M4. The same trend is observed among students in rural male schools, the difference there is significant for all the subjects.

Those findings are summarized in the following table:

Table 13

Effect of Learning New Methods from the Learning Coordinators

	M4	M5	S4	S5
<u>All of NWFP</u>				
-have learned new methods.	15.05	13.99	15.50	17.93
-Have not learned new methods.	15.96	11.00	15.11	13.32
-Significance	.59	.08	.84	.037
<u>Rural Male Schools</u>				
-Have learned new methods.	16.52	14.80	16.12	16.96
-Have not learned new methods.	14.79	11.32	12.22	11.94
Significance	.507	.0890	.248	.0182

In sum, we found that there are significantly more visits by ASDEOs and LC's to the project than to the non project schools. The same is true both in male and female rural schools. The number of visits has no effect on student achievement. We also found that proportionately more teachers in project schools reported that they had learned new methods from the LCs than the teachers in non project schools. We found that learning new methods from the LCs is significantly related to students achievement both for all teachers in NWFP and for teachers of rural male project schools.

Teaching Practices of Teachers in Project & Non Project Schools:

This Section examines whether there are differences in the teaching practices of teachers in project and non project schools.

a) **Use of Black Board:**

Most of the teachers in the project (91%) as well as the non project (95%) schools use blackboard in their teaching. This difference between the two groups is not statistically significant. The same is found in rural male and female schools.

b) **Use of Student Monitors**

Student monitors are being used in most of the sample school as can be seen in table 14.

Table-14

Use of Student Monitors in Project and Non Project School

	Project School	Non Project School
Monitor Being used	76.80%	60.80%
Monitors not used	23.20%	39.20%
Significant		0.06

The teachers of the project schools are using student monitors proportionately more than the non project area and the difference between the two is almost statistically significant.

The student monitors are used on average for 5 hours in a week in the project schools and 4 hours a week in the non project school. There were no significant differences in the use of monitors between project and non project in rural male and female schools. We then compared the achievement of students whose teachers used monitors and of students whose teachers did not use monitors. There were no significant difference for NWFP as a whole or for rural male and female schools.

c) Use of National Teaching Kit

The national teaching kit (NTK) is used in the project and non-project schools. The basic facts learned in the survey about the National Teaching Kit in project and non project schools are summarized in table 15.

Table-15.

Availability and use of National Teaching Kit
in Project and Non-Project Schools

	Project Schools	Non Project Schools
i) Teachers who have NTK	69.9%	69.7%
ii) Availability of Manuals with N.T.K.	42%	52%
iii) Use of N.T.K. in Schools	37%	25%
iv) Average (mean) of lessons in which N.T.K. used	11.18%	7.54%
v) Percentage of teachers trained in use of N.T.K.	16%	14%

Although we can see differences in the pattern of responses in project and non project schools these differences are not statistically significant. The same is true for rural male and female schools.

d) The Teaching of Maths and Science

The data regarding teaching of Maths and Science were taken in terms of how many exercises in Maths and how many pages in the science text-books had been covered until the day of the survey.

The results are summarized in table 16.

Table 16

Weekly Period/Exercises/Pages in Maths and Science
in Project and Non Project

	Maths No. of Periods per week	No. of Exercises covered(Mean)	Science No. of Period Per week	No. of Pages covered (Mean)
Project	6.30	33.22	5.22	51.48
Non Project	7.52	35.74	6.68	49.79

There are no statistically significant differences between project and non project schools in amount of teaching in maths and science. For rural male schools, however, project schools teach less periods per week than non project schools . There was

no impact of number of periods in math in students achievement. There is no difference in the number of periods taught in between project and non project rural female schools.

e) Homework:

Students in both type of schools are given home work. The daily volume of home work can be seen in the following table 17.

Table 17

Daily Volume of Home work in maths and science
in Project/Non Project Schools

	Maths (Problem)	Science (pages)
Project	4.90	1.88
Non Project	6.09	2.09

In both case the volume of homework given to the student in Maths and Science is more in the non project areas than in the project area. The difference in amount of homework in maths between project and non project schools is statistically significant (more homework given in the non project schools), but there is no difference between the two types of school in the amount of home work for science. There was no correlation between the amount of homework in math and student achievement. For rural male and female schools there were no differences in the amount of homework given in the project and non project schools.

f) Physical Punishment

The students in both types of school are given physical

punishments. The use of physical punishment is summarized in the following table 18.

Table 18
Use of Physical Punishment by Teachers in
Project/Non Project School

	% of teacher using Physical punishment
Project school	65%
Non Project School	58%

The observed difference in use of punishment between project and non project schools is not statistically significant. The same is true for rural and female schools.

g) Tests

Teachers in both type of schools give monthly tests. The percentage of teachers who administered a test to their students during the month preceding the survey is summarized in table 19.

Table-19

Test given in the preceding month of the Survey
in Project and Non Project Schools

	Percentage of Teacher	
	Project	Non Project
a) Teachers who give test	86.5%	82.2%
b) Teachers who didn't give tests	13.5%	17.8%

There is no significant difference between the project and

non project schools in the use of tests. The same is true for rural male and female schools.

Conclusions, Interpretations and Implications for Policy and Research.

Effect of the Primary Education Project in Student

Achievement

The trend of student achievement in the project schools seems better than in non project schools in N.W.F.P. The difference in science class 4 is statistically significant whereas the difference in maths in class 4 and 5 and science in class 5 between project and non project schools is not significant.

If the scores of project schools of N.W.F.P. are compared with the scores of the project schools of the provinces of Balochistan and Sindh the scores of N.W.F.P. are higher in the project schools, than in the other provinces.

Examining the difference in students achievement of Project and Non Project Schools separately for urban and rural schools and for female and male teachers we obtained these results:

- a) There are statistically significant differences between the achievement scores of the male project schools and the scores of male non project school in all the subjects. There is no significant difference in the

achievement scores of the students of female project and non project schools.

- b) There is a statistically significant difference in the achievement scores of the rural students of the project schools and the scores of rural students of non project schools. For urban schools there are no significant differences between the project and non project schools.
- c) Within rural schools, we examined the impact of the project separately for female and male teachers and found no significant differences in the achievement of the students of rural female teachers in project and non project schools. However, students of male teachers in project schools achieved significantly higher scores than in non project schools.

Effects of the Primary Education Project II in Supervision:

The volume of supervision has increased in both the project and non project schools, due to the reorganization of Education Department Schools in November 1979 and launching of the experimental Primary Education Project in 1981.

The project provided additional personnel between the Assistant Sub Divisional Education Officer and the Primary School for improved supervision, professional guidance and on-the-job training of the Primary School Teachers in the Project Areas. They are the "Mobile Learning Coordinators". The learning

coordinators have 18-25 schools in their "beat" area. They are supposed to visit a school daily and spend a full day in the school.

For their mobility each male learning coordinators has been provided a motorcycle and female learning coordinators have been provided jeep/vans in groups. The mobility has provided better means of communication and they can reach school well in time. The Assistant Sub Divisional Education Officer (Female) can also share the transport of the female learning coordinators on the same route without disturbing their programme.

The data analyzed in this paper confirm that the Learning Coordinators visit schools more frequently in the project schools than in the non project schools and this difference is statistically significant. Similarly the difference in the visits of Assistant Sub Divisional Education Officers is also higher in the Project areas as compared to non-project areas, and this difference is statistically significant. However, the frequency of visit by learning coordinators or ASDEOs has no significant impact on student achievement.

The frequent visits and spending full day a month in a school by the learning coordinators seems to have resulted in better, meaningful learning from teachers, as 91 percent of the teachers have admitted that they have learnt new methods of teaching from the visit of the learning coordinators in the

project areas, while only 77 percent of the teachers in the non project areas say that they have learned new methods for the learning coordinators for the supervisors. There is a significant impact on student achievement where teachers learns something from the visits of the learning coordinators.

Effects of the Primary Education Project II in Classroom Practices

We examined the differences between project and non project schools in the following practices of teachers:

1. Use of blackboard (B.B.)
2. Use of Student Monitors.
3. Use of National Teaching Kit (NTK).
4. Teaching of Maths and Science.
5. Home Work.
6. Physical Punishment.
7. Tests.

The Project schools seem to emphasize more the use of the National teaching kit, more teachers use the teaching kit and more teachers are trained to use it in project schools, whereas more teaching kits and manuals are available in the non-project schools. These differences, however, are not statistically significant.

We examined the differences of project and non project teachers separately for rural male and rural female teachers and

found that there are no significant differences in almost all items related to the national teaching kit between project and non project schools in urban male and in rural female schools. On average, there is significant difference in number of teacher trained in the project schools than in the non project schools. The same difference is not observed for rural female teachers.

In teaching of Maths and Science (in term of number of exercises covered in maths and number of pages covered in science) non-project schools are ahead in maths and behind in science, there is no significant difference between project and non project schools. The number of periods given to these subjects is higher in the non-project schools, although it is not significant in math. There is no impact, however, periods of teaching math on students achievement.

We examined the differences of project and non project teachers separately for rural male and rural female teachers and found that for male rural schools there is a significantly higher number of periods per week in non project schools than in project schools in teaching of maths and there is no difference in the female schools of project and non project districts.

There is slightly more use of the Black Board and assigning more Homework in the non-project schools, however the difference with the project schools is not statistically significant.

The schools in the project area use more student monitors and for more number of hours. This difference is statistically significant. There is no impact of use of monitors on student achievement.

Students are given more test in the project schools than in the non-project schools but the difference is not statistically significant.

Students familiarity with multiple option tests in project schools is significantly higher than in the non-project schools. The difference is statistically significant. There is no impact of test on average students achievement.

The project area teachers use more physical punishment than the non-project area teachers but again the difference is not statistically significant.

Conclusions

1. Achievement scores of the students in maths and science classes IV and V in the male rural project schools is significantly higher in all subjects than the achievement of students in the non project schools.
2. Frequency of visits of the Assistant Sub-Divisional Education Officers and Learning Coordinators in project

schools is significantly higher than in the project schools.

- 3. The lesser impact of the project in urban areas though there are limited urban areas in the project is of concern and needs to be looked into. (Out of 24 male schools only one school was urban and out of 16 female schools 4 were urban in the project districts of Mardan and Swat).**
- 4. Another interesting finding is the lack of significant difference in the teaching practices in project and non project schools. Yet the trend of higher achievement scores of students in the project schools compared to the achievement of students in the non project schools is amazing.**
- 5. The effects of late provision of transport to the female learning coordinators and taking over of schools in later tranches also needs an independent study.**
- 6. Of all the practices in which project and non project schools differ only the proportion of teachers who reply that they have learned new teaching methods from the learning coordinators has a significant impact on students achievement. This suggests that the learning coordinator has a significant role to contribute to students achievement, but it is the quality of the visits of the learning coordinator rather than their frequency that contribute most to students learning.**

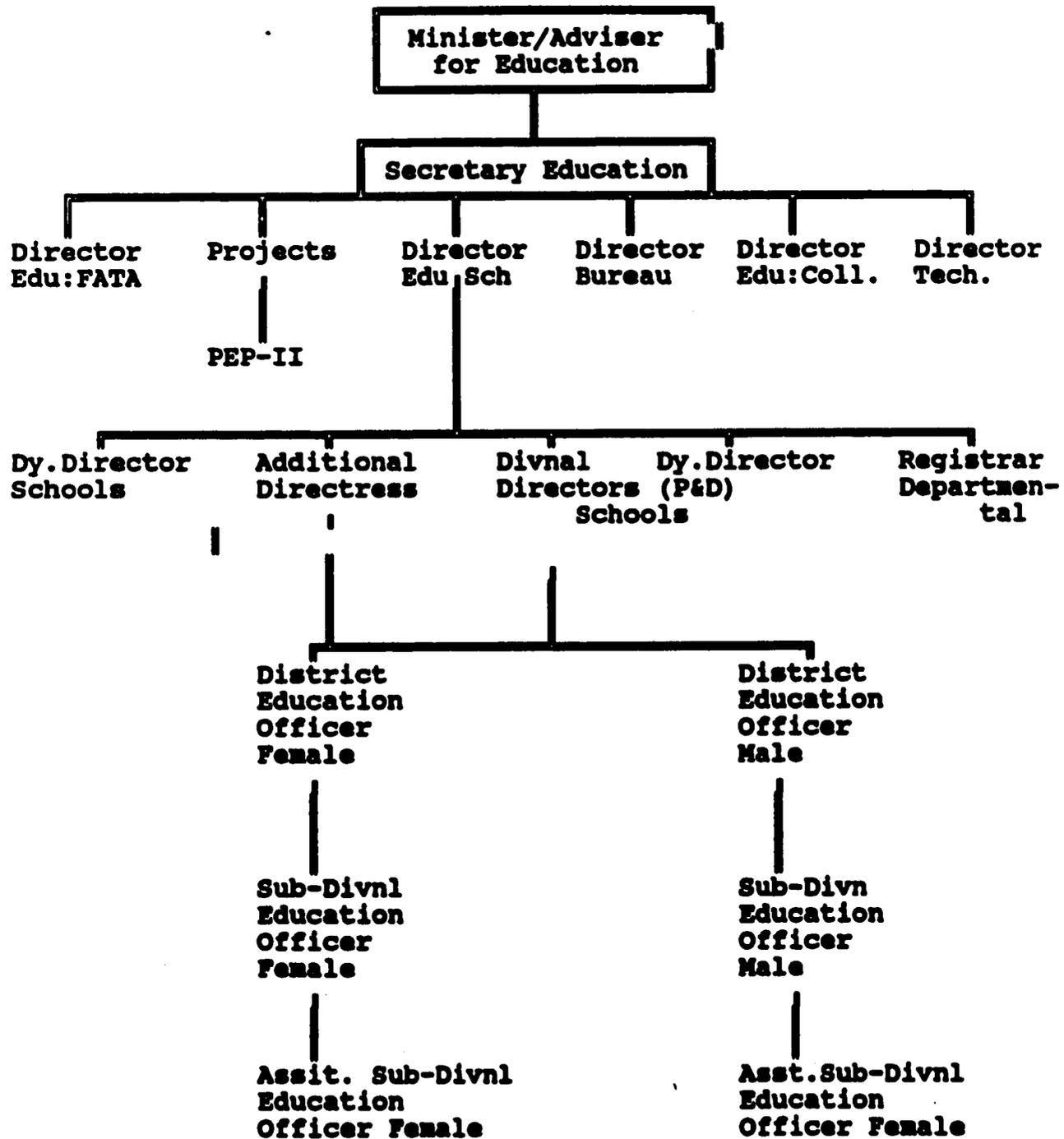
Further research should explore in detail these qualitative differences between the visits of learning coordinator.

Appendix A.**Background Information about Education in NWFP**

The Education Department in the province has a long history since independence. The present set up of the department which separates school and college education was bifurcated with effect from 1.11.79 and afterwards the Bureau of Curriculum Development and Education Extension Services was also made an independent Directorate. The administrative structure of the Education Department, NWFP is presented on the following page.

Table 1

Administrative Set up of Education Department, NWFP



The Director Education (Schools) in the province is responsible for the entire school education from classes 1-10 and in cases of higher secondary schools upto class 12.

The following table presents reveal the number of institutions controlled by Director Education (Schools), NWFP.

Table II
No. of Institutions (Male & Female) in NWFP*

Type of Institution	Male	Female	Total
Elementary Schools	155	-	155
Mosque Schools	3477	-	3477
Mohallah Schools	-	86	86
Primary School	6599	3051	9648
Lower Middle Schools	8	-	8
Middle Schools	583	142	725
High Schools	747	158	905
Higher Secondary Schools	37	3	40
Grand Total:-	11604	3440	15044

*Source: Year Book Educational Statistics 1988-89
(Directorate of Education Schools, NWFP.)

The pre-service and in-service training programmes are the responsibility of the Director, Bureau of Curriculum and Education Extension Services. The Bureau has the following institutions for this purpose:-

Table III

No. of Institutions Imparting In-Service/Pre-Service Training in NWFP				
Type of Institutions	Male	Female	Combined	Total
Elementary Teachers Training Colleges	10	5	-	15
Agro-Technical Teachers Training College	-	-	1	1
Education Extension Centre	-	-	1	1
In-Service Training Colleges	1	1	-	2
Total:-	11	6	2	19

*Source: Year Book Educational Statistics 1988-89
(Directorate of Education Schools, NWFP)

Appendix-B

**BRIDGES - AEPAM
NATIONAL PRIMARY SCHOOLS SURVEY TEAMS**

Provincial Coordinator : Syed Fazal Qadir.

Assistant Coordinators
for Distt: Swat. : Qazi Fazle Haque.

for Distt: Peshawar : Sahibzada Latif-ur-Rehman.

for Distt: Mardan : Qazi Abdul Jalil.

for Distt: Bannu : Mr. Sherin Jan.

Field Researchers/Interviewers.

1. Mrs. Farkhanda Naseem : DDEO (Female), Peshawar.
2. Miss. Shamim Akhtar Khaliq: Head Mistress, GCHS Drosh.
3. Miss. Shamim Akhtar : LC, (Female), Mardan
4. Miss. Shamim Akhtar : LC, (Female), Mardan
5. Miss. Jamila Khatoon : LC, (Female), Mardan
6. Miss. Farhad Begum : LC, (Female), Mardan
7. Miss. Mahal Begum : LC, (Female), Sawabi
8. Miss. Saeeda Bibi : LC, (Female), Sawabi
9. Mr. Gharib Khan : LC, (Male), Sawabi
10. Mr. Zarin Muhammad : LC, (Male), Sawabi
11. Mr. Fazle Rabbi : LC, (Male), Sawabi
12. Mr. Fazle Rehman : LC, (Male), Sawabi
13. Mr. Sharif Khan : LC, (Male), Mardan
14. Mr. Saleem Masih : LC, (Male), Mardan
15. Mr. Fazle Hadi : LC, (Male), Mardan
16. Mr. Abdul Wakil : LC, (Male), Mardan

17. Mr. Nasir Khan : LC, (Male), Mardan
18. Mr. Hamesh Gul : LC, (Male), Mardan
19. Mr. Minhaj-ud-Din : LC, (Male), Mardan
20. Mr. Ghaniullah : LC, (Male), Mardan

Pashto Translation of the Tests:

- Mr. Mohammad Saleh : LC, (Male), Sawabi
(Translator).
Mian Muzaffar Shah : Deputy Director PEP II
(Editor).

ENDNOTES.

1. This paper was produced during the BRIDGES Training Workshop on Analysis of Survey Data which took place at the Academy of Educational Planning and Management from January 6 to February 8, 1990. The workshop was conducted by Donald Warwick and Fernando Reimers from Harvard University. Earlier drafts of this paper were discussed in the training workshop and received feedback from the instructors as well as from the participants: Ijaz Ahmad, Nawaz Ahmad, Islamuddin Baluch, M. Anwar Hussain, Syed Fazal-Qadir, Nasim Qaisrani and Ikram Qureshi. The contents of this paper are the sole responsibility of the author.

The data used in this paper were collected in the AEPAM-BRIDGES National Sample Survey of Primary Schools in Pakistan carried out during 1988-1989. This survey was part of the BRIDGES Project, a Cooperative Agreement between the Harvard Institute for International Development and the Office of Education, Bureau of Science and Technology, United States Agency for International Development.

The study which provided the data for the analysis reported in this paper could not have been carried out without the participation of a number of persons. The study is a joint project of BRIDGES and the Academy of Educational Planning and Management, Ministry of Education, Pakistan. Professor Laeeq Ahmed Khan and Dr. Abdul Ghafoor, Directors of the Academy helped in carrying out this research and in organizing the training workshop in data analysis. Dr. Sarfraz Khawaja of the Academy participated in the design of the study and solved many administrative problems. Aslam Bhatti was the field coordinator for research in the Federal District and supervised the production and distribution of questionnaires. Kursheed Ahmed and Ijaz Ahmad were the field coordinators for research in Balochistan, M. Anwar Hussain in Punjab, Syed Fazal-Qadir in North West Frontier Province, and Ghaffar Siddiqui and M. A. Meher in Sindh. Our deepest appreciation also goes to the more than 100 interviewers, too many to name, who provided hard work, enthusiasm and care in collecting the data. Nasir Amin of the Academy provided diligent and dedicated supervision of data entry. Coding of the data was the responsibility of a team of BRIDGES staff including Haroona Jatol and Habib Khan of the Academy.