

**COST PROJECTIONS FOR BACHELOR OF EDUCATION, MASTER OF EDUCATION
AND MASTER OF ARTS IN EDUCATION DEGREE PROGRAMMES
IN WEST PAKISTAN FOR THE YEARS 1969 TO 1988**

**A Dissertation
Presented to
the Faculty of the Institute of Education
and Research, The University of Dacca**

384852

**In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education**

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by

Muhammad Maqsood Alam

August 26, 1970

APPROVAL PAGE

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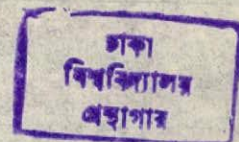
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ABSTRACT

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Statement of the Problem

The problem of the study was to analyse the prevalent cost factors involved in the Teacher Training Programmes leading to the Degrees of Bachelor of Education, Master of Education and Master of Arts in Education in West Pakistan and to make cost projections for these Teacher Training Programmes for each year from 1969 to 1988.

Methods of the Study

The methods of the study involved document analysis, survey, interviews and projection calculations. The available documents, research studies and statistical year books were analysed to determine the sources of income and heads of expenditure in the Teachers' Training Institutions and to collect the data for the projections. A questionnaire was developed to survey the Teachers' Training Institutions included in the study. The main aim of the questionnaire was to determine the financial set up of the Teachers' Training Institutions and to collect data for projections. For this purpose the first part of the questionnaire consisting of items one to thirty was used. The second part of the questionnaire consisting of items thirty-one to forty-one served as an interview schedule, which was used to determine the

financial process of the Teachers' Training Institutions.

In making projections the methodology involved in An Asian Model of Educational Development: Perspectives for 1965-80 was used. According to this Model the cost for the Teachers' Training Institutions could be calculated from the enrolment projections of the Teachers' Training Institutions which in turn could be determined from the school enrolments. Hence secondary school enrolment projections and enrolment and cost projections for the Teachers' Training Institutions were made as under:

1. Secondary school enrolment projections were made for the years 1969 to 1990. These projections were of two types: (a) based on the past trend of enrolments in Classes VI to X in West Pakistan and (b) based on the targets for achieving universal education up to Class VIII by 1985.
2. Enrolment projections for the Teachers' Training Institutions were made for the period 1969 to 1989. These projections were of three types: (a) based on the past trend of enrolments in the Teachers' Training Institutions, (b) based on school enrolment trend projections and (c) based on school enrolment projections for achieving universal education up to Class VIII by 1985.
3. Cost projections for the Teachers' Training Institutions were made for the period 1969 to 1988 and were of three types:
(a) cost projections calculated from the enrolment projections of the Teachers' Training Institutions based on their own past trend of enrolment, (b) cost projections calculated from the

enrolment projections of the Teachers' Training Institutions based on school enrolment trend projections and (c) cost projections calculated from the enrolment projections of the Teachers' Training Institutions based on school enrolment projections for achieving universal education up to Class VIII by 1985.

In calculating the total teacher requirement a pupil-teacher ratio of 17:1 was used. An attrition rate of .11 was used to calculate the additional teacher requirement. While calculating the additional pupil-places 3 per cent replacement rate due to obsolescence was used. The per-pupil recurring and capital costs used in the study were Rs.1,071.95 and Rs.4,936.06 respectively. An annual inflation rate of 2.5 per cent was used in projecting cost for the Teachers' Training Institutions for the years 1969 to 1988 with 1968 as the base year.

Findings

Important findings of the study were as follows:

1. Out of the existing nine Teachers' Training Institutions in West Pakistan, seven were established after 1947. These institutions were not evenly distributed in West Pakistan.
2. The admission requirements and the course duration for the Master of Education Degree Programme were different in different institutions.
3. The rates of fees were different at different institutions. These rates were the least at Teachers' Training College, Karachi.

4. The institutions at Hyderabad, Lyallpur and Sukkur did not receive any financial aid for the students during the years 1966-67, 1967-68 and 1968-69.
5. The sources of income for the Teachers' Training Institutions were the government grants, fees, endowments and investments. Of these sources the government grants served as the main source of income.
6. Recurring and capital heads were the main heads of expenditure. The sub-heads of the recurring expenditures in the Teachers' Training Institutions were salaries, allowances, scholarships, cost of instructional materials and contingencies. About three-fourths of the recurring expenditure were spent on salaries in the years 1966-67, 1967-68 and 1968-69.
7. The Teachers' Training Colleges prepared and presented the budgets to the government and these budgets were approved by the Finance Department of the government. The budgets for the College of Education, Peshawar, Institute of Education, Hyderabad and Institute of Education and Research, Lahore were handled by these institutions and the respective universities.
8. The problems in the financial process of the Teachers' Training Institutions were identified as under:
 - a) The procedure of receiving the financial aid was lengthy.
 - b) The needs of the Teachers' Training Institutions were not determined objectively in giving developmental grants.
 - c) The grants for the purchase of library books and scientific

equipment were given at the end of the fiscal year.

Hence these grants were not likely to be spent wisely.

- d) The educationists and the heads of the institutions were not involved in fixing priorities and in deciding about the grants for the institutions.
 - e) The amounts sanctioned for the developmental schemes were given to the Public Works Department, which was rather slow in completing the work.
9. The enrolments in Classes VI to X in West Pakistan were likely to be 2,225,965 and 4,273,884 in the years 1980 and 1990 respectively, if the past trend of enrolments in the secondary schools continued. The enrolment figures of 1990 would be about four times the enrolment figure of these classes in 1970 under the same projections.
 10. Under the school enrolments for achieving universal education up to Class VIII by 1985, a rapid and gradual increase was expected in the school enrolments from 1969 to 1985. The secondary school enrolments would be 1,446,333 and 9,632,129 in the years 1969 and 1985 respectively. The rate of increase under the same school enrolment projections was expected to be comparatively slower in the years 1986 to 1990.
 11. Under the enrolment trend projections of the Teachers' Training Institutions the enrolment of these institutions in 1989 was likely to be 7,902, which was about three times 2,799, the actual

enrolment of these institutions in 1968-69.

12. The enrolments of the Teachers' Training Institutions showed a gradual increase throughout the projection period under the enrolment projections of these institutions based on school enrolment trend projections. The enrolment of the Teachers' Training Institutions in 1989 was expected to be 24,831 in case graduate teachers were to be trained for the secondary school enrolments increasing under their own past trend. This enrolment figure was about nine times the actual enrolment of these institutions in 1968-69.
13. The enrolments of the Teachers' Training Institutions were expected to be 53,068 and 49,680 in the years 1984 and 1989 respectively if graduate teachers were to be trained under the target of achieving universal education up to Class VIII by 1985.
14. If the enrolment of the Teachers' Training Institutions continued increasing according to the past trend of enrolment of these institutions the recurring cost of the Teacher Training Programmes included in the study would be Rs.13,440,000 in 1988. This figure would be more than four times the recurring cost of these programmes in 1969.
15. The recurring cost of the Teacher Training Programmes was expected to be Rs.40,861,000 in 1988 if graduate teachers were to be trained for the secondary school enrolments increasing under their past trend.

16. The recurring cost of the Teacher Training Programmes was expected to be Rs.85,633,000 in 1988 if graduate teachers were to be trained for the secondary school enrolments increasing under the target of achieving universal education up to Class VIII by 1985.
17. The capital cost for the Teacher Training Programmes was likely to be Rs.3,888,000 in 1988 if the past trend of enrolment in these institutions continued. This cost was more than double the capital cost of these programmes in 1969 under the same projections.
18. The capital cost for the Teacher Training Programmes was likely to be Rs.18,328,000 in 1988 if graduate teachers were to be trained for the school enrolments increasing according to their past trend.
19. The capital cost for the Teacher Training Programmes would be Rs.19,336,000 in the year 1988 if graduate teachers were to be trained for the school enrolments increasing under the targets of achieving universal education up to Class VIII by 1985.

Recommendations

The recommendations of the study are as under:

1. New Teachers' Training Institutions should be established to supply the required number of trained graduate teachers for the school enrolments in the future.

2. Scholarship grant should be sanctioned to finance the deserving trainees in the Teachers' Training Institutions at Hyderabad, Lyallpur and Sukkur.
3. Sufficient funds should be provided for the purchase of library books, scientific equipment, instructional materials and furniture.
4. The needs of the Teachers' Training Institutions should be determined objectively before the grants for the developmental projects are sanctioned. A committee consisting of educationists, economists, officers of the Finance Department and the heads of the Teachers' Training Institutions should be made to evaluate the developmental needs of the institutions. The priorities should be fixed and the grants should be sanctioned on the basis of the recommendations of this committee.
5. Similar projections are recommended to be carried out when new data are available. Such studies can be conducted for different educational levels in Pakistan. The studies may be undertaken with different population projections and applying different pupil-teacher ratios. Then a comparison of such studies can be made for the educational planning in the future. This study has been based on the assumption that the promotion rate, retention rate in Classes VIII, IX and X, the attrition rate and the inflation rate will remain constant throughout the projection period. These assumptions may not hold good for all times to come. Hence some type of longitudinal studies are recommended to identify these rates over a period of time.

6. The total cost incurred in training graduate teachers is expected to be so high in the projection period that the provision of so high funds seems unrealistic under the present circumstances. Hence it is recommended that, as proposed under the Education Policy, education should be introduced as a subject at college level and the graduates taking education as a subject in the colleges may be posted as teachers in the schools and some effective type of in-service programme may be introduced for such teachers. Double shift training college is another measure for training more graduate teachers on economic basis. It is also recommended that the target of achieving universal education up to Class VIII by 1985 should be shifted to 1990 at the latest.

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CHAPTER I

INTRODUCTION

A programme is likely to prove a success if suitable planning is made well ahead of time. The importance of planning in various aspects of national life is recognised by all developed and developing countries of the world. Planning should be based on accurate data as far as possible. To draw a long-term plan it is necessary to make projections for meeting the future needs in the various sectors. It is also necessary to indicate the financial implications involved in meeting these needs. The establishment of the Planning Commission by the Government of Pakistan is the result of the need felt by Pakistan for planning the future requirements. Planning plays an important role in education. To quote one source, " . . . it is necessary that educational planning should go hand in hand with planning in other national sectors." (2, p. 41.)

One aspect of educational planning is involved in making the estimates about the future enrolments, teacher supply situation and the cost involved in teacher preparation. These estimates give us the basis for planning in education. In the First, Second and Third Five Year Plans of Pakistan, the targets were probably set with inadequate estimates of the future requirements and the allocations for the education sector were based on the "residual policy" as pointed out by Adam Curle. In his words:

It is interesting that the broad lines of educational policy and financial allocations for education in all three Five Year Plans . . . were arrived at in a very arbitrary way. No body had . . . any reliable empirical method of determining the appropriate proportion of planned expenditure to be devoted to education. (3, p. 42.)

According to this point of view planning in the education sector in Pakistan had to be based on inappropriate estimates of the future requirements. Better estimates for the growing school population, the teacher requirement and the cost for teacher preparation can help in making fair educational planning. This study aimed at providing some more appropriate future estimates that might be useful for proper, efficient and meaningful planning for teacher education in West Pakistan.

Statement of the Problem

The problem of the study was to analyse the prevalent cost factors involved in the Teacher Training Programmes leading to the Degrees of Bachelor of Education, Master of Education and Master of Arts in Education in West Pakistan and to make cost projections for these Teacher Training Programmes for each year from 1969 to 1988.

Purpose of the Study

The study had the following purposes:

1. To identify the sources of income and heads of expenditure in the Teachers' Training Institutions offering Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan.

2. To find information about the amounts of income and expenditure pertaining to these Teacher Training Programmes in West Pakistan.
3. To survey the process of financing these Teachers' Training Institutions.
4. To elicit suggestions from the heads of these institutions for the improvement of the financial set up.
5. To project the cost for these Teacher Training Programmes in West Pakistan for each year from 1969 to 1988¹.

Significance of the Study

Teaching is a challenging profession and as such teachers need adequate preparation to meet this challenge. In view of the many demands made on teachers by the society, the teacher education programmes particularly those leading to the Bachelor of Education, Master of Education and Master of Arts in Education Degrees become more important. Teachers with these degrees generally go to teach at the secondary stage, which is regarded as the back-bone of the total education system. At this stage is laid the foundation of an educated citizenry. With diversification of the secondary school curriculum it is expected to

¹The cost for the Teacher Training Programmes was projected up to the year 1988, on the basis of enrolments in these Teacher Training Programmes up to 1989, as the capital cost for a programme is provided one year earlier. The enrolments for the Teacher Training Programmes up to 1989 were calculated from the school enrolment projections up to 1990, which were made on the basis of the population projections available up to the year 1990.

identify and cultivate the unfolded traits of character, abilities and aptitudes of students for their further development in the future years. As these Teacher Training Programmes prepare teachers for the secondary level of education, these Teacher Training Programmes were selected for the study in respect of their financial aspects and cost projections. This study might be helpful in ascertaining the budget allocations needed to efficiently operate the Teacher Training Programmes in West Pakistan from 1969 to 1988.

Projections in different sectors are required as an essential part of the developmental planning in any country. As Pakistan has also been formulating plans, it seems worthwhile to plan ahead of time for the cost to be incurred for these Teacher Training Programmes. The findings of this study might help the planners, educators and different government agencies in matters of better planning and making adequate fund allocations.

According to Proposals For A New Education Policy (1969), the First, Second and Third Five Year Plans gave low budget allocations to the education sector. It mentioned that "With its total expenditure on education accounting for about 1.8% of G.N.P., Pakistan ranks among the countries which accord the lowest priority to education." (4, p. 9.)

In the context of this statement it appears that the budget allocations for education in the three Five Year Plans of Pakistan have been insufficient. As a result of low budget allocations for education sector, the allocations for the Teacher Training Programmes were also low. It might have partly been due to the reason that future

requirements were not accurately estimated. This study attempted to provide information about the expenditure to be incurred for the Teacher Training Programmes for each year from 1969 to 1988. The projections were made according to the methodology given in An Asian Model of Educational Development: Perspectives for 1965-80. This model is a recent projection model accepted by the Asian Member States of UNESCO. As far as it is known, it was the first time that this model was used to estimate future cost involved in the Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan.

Methods of the Study

The methods of the study involved document analysis, survey, interviews and projection calculations. The related research studies, the ledgers maintained by the Institutions for accounts and such other documents were reviewed to identify the sources of income and the heads of expenditure.

A questionnaire comprising of two parts was prepared to survey the Teachers' Training Institutions, included in the study. The first part consisting of items one to thirty dealt with: (1) the introductory information about the institutions, (2) admission requirements, (3) rates of the fees, (4) financial help given to the students, (5) area of the institution land and its cost, (6) enrolments, (7) income and (8) expenditure.

The second part of the questionnaire comprising of items

thirty-one to forty-one, served as an interview schedule and dealt with the prevalent process of financing the Teacher Training Programmes.

The data collected through the survey and interviews were used to present the financial aspects of the teacher education and to project cost for the Teacher Training Programmes up to the year 1988. These cost projections were made on the basis of the enrolment projections up to 1989 for the Teachers' Training Institutions, which were calculated from the secondary school enrolment projections up to 1990. While making these projections the methodology given in the Asian Model was used.

Assumptions

The following assumptions were made for the study:

1. The pupil-teacher ratio in the secondary schools of West Pakistan in 1967-68 was assumed to be constant throughout the projection period.
2. The percentage of the teachers having Bachelor of Education, Master of Education and Master of Arts in Education Degrees in the secondary school teachers in West Pakistan was assumed to be constant throughout the projection period.
3. The fraction of Class VIII enrolment in a year joining Class IX in the following year was assumed to be constant for the projection period. Similarly the fraction of Class IX enrolment in one year joining Class X in the following year

was also assumed to be constant during the projection period. It was assumed that the enrolments in Classes IX and X in one year came from the enrolments of Classes VIII and IX of the previous year respectively.

4. The fraction of trained graduate teachers joining the profession and the attrition rate were assumed to remain constant during the projection period.
5. The fraction of the enrollees of the Teachers' Training Institutions completing the programme successfully was assumed to remain constant in the projection period.
6. The inflation rate and the rate of replacing pupil-places due to obsolescence were assumed to be 2.5 per cent and 3 per cent per annum respectively for the projection period.
7. It was assumed that normal age for admission to Class I would be five plus, hence eleven, twelve and thirteen year age groups would be in Classes VI, VII and VIII respectively.

Definition of Terms

The terms used in the study have been defined as under:

1. Secondary school. This term includes any school having Classes VI to X or part thereof.
2. West Pakistan. This term means the western wing of Pakistan. Baluchistan, North West Frontier, Punjab and Sind were separate provinces since 1947 and even before that. These provinces were integrated into one province on October 14, 1955, (17, p. 5.)

but they were again disintegrated into former provinces on July 1, 1970. (17, p. 5.) For the purpose of the study West Pakistan means the geographical area covered by these four provinces in the western wing of Pakistan.

3. Teachers' Training Colleges. This term was used in this study for Central Training College Lahore, Lady MacLagan Training College Lahore and Training Colleges at Lyallpur, Multan, Sukkur and Karachi.
4. Teachers' Training Institutions. This term includes all the Teachers' Training Colleges in West Pakistan, College of Education Peshawar, Institute of Education Hyderabad and Institute of Education and Research Lahore. Thus this term includes all the institutions offering Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan.
5. Teacher Training Programmes. This term includes Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan.
6. Trained Graduate Teacher. This term was used for a teacher who has Bachelor of Education or Master of Education or Master of Arts in Education Degree.
7. Capital costs. These costs are the expenditures on those items which directly lead to the creation of additional durable facilities, assets and capacities. In this study capital costs would mean expenses on land, buildings, books and furniture as

also defined by Planning Department, Government of East Pakistan. (7, p. 78.)

8. Recurring costs. These costs refer to the regular items of expenditure which will continue to be incurred for the effective and smooth functioning of the institutions. Hence in this study the recurring costs would mean expenditures on salaries, scholarships, allowances, operation of plant, maintenance of plant and building, purchase of non-durable equipment and instruments and such other items. (7, p. 78.)

Abbreviations

Following abbreviations were used in the study:

1. B. Ed. Bachelor of Education.
2. M. Ed. Master of Education.
3. M. A. (Edu.) Master of Arts in Education.
4. T. T. C. Lahore (Female) Lady MacLagan Training College, Lahore.
5. C. T. C. Lahore Central Training College, Lahore.
6. T. T. C. Lyallpur Government Training College, Lyallpur.
7. T. T. C. Multan Government Training College, Multan.
8. T. T. C. Sukkur Government Training College, Sukkur.
9. T. T. C. Karachi Government Teachers' Training College, Karachi.
10. I. E. R. Lahore Institute of Education and Research, Lahore.

CHAPTER II

REVIEW OF RELATED LITERATURE

An attempt was made to review the available literature related to the present study. The discussion has been presented in this chapter under the following four sections:

1. Sources of income.
2. Factors of cost and heads of expenditure.
3. The Asian Model.
4. Projections.

Sources of Income

In this section the sources of income for the educational institutions have been discussed. Nurullah found the following different sources of income for the educational institutions in the Asian Countries: (13, p. 13.)

1. Central (federal) government funds.
2. State (provincial) government funds.
3. Contributions from local bodies.
4. Fees.
5. Such other sources as charitable, religious, or other endowments and private donations.

Nurullah found that some countries drew on one or two of the above sources while some others utilized all five sources simultaneously. The pattern did not remain constant even within the same country, since

various sources were used at various times and choices were dictated by changing circumstances. In some of the countries religious and charitable endowments were found to be rich in their yield. He further stated that most countries adopted the single source system of financing education and depended entirely on the central or federal government to find the money. These countries argued that this system was right not only because it was the sole responsibility of the central governments to finance education but also because it did away with many administrative complications that set in if the responsibility was shared. On the other hand the supporters of multi-source system contended that central governments had so many claims upon their funds that education could expect to receive an inadequate amount of money. The provincial governments had fewer demands upon their resources and could relieve central governments of a part of burden of education. The resources of district boards, municipalities and other local bodies should also be utilized.

Manzoor Ahmed analysed some sources of income for education in Pakistan and stated that " . . . there are only four main sources for funds, viz., the central government, the provincial government, the local government bodies and the private citizens." (1, p. 2.)

Manzoor Ahmed continued to say that as far as the share of the local bodies toward education was concerned, it had been quite helpful. The figures of the central government funds and the provincial government funds might be dug out but there was no reliable

statistics for the contribution of private and local bodies in education. According to the estimate given by the author the share of private sector and that of the local government bodies in educational expenditure up to the early 1960's had been about one third of the total expenditure on education in Pakistan. (1, p.2.)

The Commission on National Education (1959) had its own ideas about educational finance. According to the Commission's Report:

There has been very little financial support from the general public for education, The practice has rather been to look to government for the provision of free primary schools and for secondary education at a nominal fee. (5, p. 333.)

The Commission thought that educational finance could come from government, businessmen and general citizens. In the words of the Commission:

Our main hope for securing adequate finance for the nation's educational enterprises is that government, the business community and the people in general recognise and accept the close relationship . . . that exists between education and economic productivity. (5, p. 331.)

The Commission suggested the following measures of financing education in Pakistan:

Primary Education. For primary education the Commission thought that government alone could not meet the entire cost. Therefore special tax should be levied on the district level in West Pakistan and at the sub-divisional level in East Pakistan to support primary education. The Commission gave the example of Brazil and other countries, which had constitutionally levied special education tax. It was suggested, "That government should try to raise through

this tax 50% of the cost of primary education, leaving the balance of 50% to be met from the resources of provincial government." (5, p. 180.)

Secondary education. For the secondary education the Commission pointed out three different sources of income: (1) fees, (2) contribution from management and (3) a grant from government. The Commission was of the view that, "Fees should provide 60%, management 20% and government 20% of the recurring expenditure of the secondary schools." (5, p. 135.)

The contribution of the industry. The Commission thought that the industrial sector failed to support education, even technical education from which it derived direct and immediate benefits. A direct tax upon industry for the support of technical education was proposed. The Commission gave reference to France, Spain and Yugoslavia where a tax of this type had already been levied. (5, p. 334.)

A suitable percentage of the cost of the major developmental Projects. The Commission thought that the cost of education of those required to staff the major developmental projects could be reasonably charged against the funds available for such projects. For this the Commission recommended that "A suitable percentage, say 5% to 7% of the cost of major development projects, . . . should be allocated for education in sciences, engineering, agriculture and technical education." (5, p. 334.) The Commission referred to the United Kingdom, where this kind of practice was in vogue.

Grants from foreign agencies. The Commission realized that a reasonable proportion of the grants from foreign agencies should be assigned for education and training required to support economic development at various levels. (5, p. 335.)

Government loans for educational facilities. The Commission proposed the possibility of providing such facilities as teachers' housing, hostels and cafeterias out of loans. In the case of teachers' housing the Commission recommended a system of long-term and low interest loans, which could be repaid from a rental charge that is within the teachers' means. Government hostels and cafeterias might be built on a matching basis with 50% by loan. In the case of privately managed institutions these facilities might be constructed by combining loans with funds raised by the management on a matching basis. (5, p. 335.)

The Commission stressed that during the next ten to twenty years there would be a continuing need to raise additional revenue, for education from taxation, philanthropy, fees, government loans, development funds and other sources. (5, p. 335.)

The heads of income maintained by the Teachers' Training Colleges, were found to be: (1) fees, (2) contributions from the local bodies, (3) income from endowments, (4) recoveries of over payments, (5) examination fees and (6) social uplift fund. (8, p. 1.) The college of Education Peshawar, Institute of Education Hyderabad and Institute of Education and Research Lahore maintained different heads of income. The following heads of income were found to be maintained by the Institute of Education and Research, Lahore. (9, p. 1.)

1. Operational grants from Government of West Pakistan.
2. Grants from Government of West Pakistan for scholarships.
3. Tuition fee.
4. Text-books rental fee.
5. Literary membership fee.
6. Rent of residential houses.
7. Other items such as fines, interests, library membership fee.
8. Transfer from the reserve of savings from previous years.

To sum up, the different sources of income for the educational institutions in West Pakistan were the Central Government Grants, Provincial Government Grants, contributions from the local bodies, endowments, donations, fees of different kinds and charitables. The main sources of income for the Teachers' Training Institutions included in the study were the government grants, fees, house rents and the income from miscellaneous items like fines and interests. Some other possible sources of income for the educational institutions, as proposed by the Commission on National Education (1959), could be the special taxes levied on the local bodies, industries, business community and major developmental projects. Grants from foreign agencies and government loans for residential facilities could be other sources of income.

Factors of Cost and Heads of Expenditure

In this section the factors of cost and the heads of expenditure in the educational institutions have been discussed.

Nurullah studied the financial set up of the primary schooling of Member States of UNESCO and found the following factors of cost in education. (13, pp. 3-8.)

Population. The population of a country was found to be the greatest of the cost factors and was of common concern, since it had a direct bearing upon the cost of education. Total population of a country increased with the result that the cost of education also underwent an increase.

The geographical distribution of population in a country was also found to have an effect upon the cost of education. The denser the population of an area, the easier it was for administration to arrange for the provision for schooling on an economic basis.

The occupational distribution of the population had its own effect on the opening of schools, on school hours, on school vacations and so on. This might also affect the cost of education in these areas, as a general rule in the direction of raising it rather than of lowering it.

Each country had its own problems created by natural causes like the presence of hilly areas or rivers. Often for isolated or nomadic populations special arrangements were made and the cost of such arrangements was above normal.

The low life expectancy was another factor of increasing the cost, because the ratio of school population was higher in Asian Countries as compared to Western Countries and this in turn affected the distribution per adult head of cost of schooling.

The multi-racial, multi-religious, multi-lingual and multi-cultural character of the population also became a factor of raising the education cost as it was necessary for educational administrators to make special arrangements for these small groups. In addition some of the social habits and practices once prevalent in most of these countries made it necessary to take special measures for the removal of prejudices and for spreading education, particularly among girls and among backward sections of the community.

School buildings and teachers' quarters. It was found that the school buildings were either given free or rented or specially constructed. It was in the last case that the question of cost was seriously involved. Same was the case with teachers' residence. The main factors involved in the cost of buildings as mentioned by Nurullah were: (1) the floor space provided per pupil in an educational institution and the floor area provided for a teacher in his quarters, (2) designs of the school buildings and teachers' quarters and (3) materials used.

School equipment. The provision for such equipment as furniture, books, pictures, models and maps, was a further charge against education.

Play grounds. Though the provision for ample playing space for educational institutions was rarely a problem in rural areas, the problem in urban areas was serious, since the high cost of reclamation of land was frequently involved.

Teachers. Employing teachers was found to be a major factor in raising the cost of education. The teacher pupil ratio could be improved only if finances permit.

Free supply of text-books and writing materials. The free supply of text-books and writing materials to students was another factor which raised the cost of education. This practice was neither common nor extensive. In some cases it did not exist at all, while in other cases it was restricted to the supply of such materials to the very needy pupils only.

Auxiliary services. A practice of such services as mid-day meal was followed in some countries. This also increased the cost of education.

Curriculum. The cost of any scheme of education also depended in some measure upon whether the curriculum followed was rich and varied or simple and uniform.

Administration, inspection and supervision. The best results could be obtained from a system of education with an adequate number of highly qualified and well paid administrators, supervisors or inspectors. Nurullah proposed to allocate a generous percentage of the total cost of education for this purpose. (13, pp. 3-8.)

The Asian Model pointed out the size of the institution to be an important factor of cost. (18, p. 65.) Experience showed that larger institutions were economical and had more instructional efficiency. (18, p. 65.) The Asian Model based its projections on recurring and non-recurring heads of expenditure. The recurring head of

expenditure had the following sub-heads of expenditure. (18, p. 34.)

1. Teacher-salary cost.
2. Personnel cost, other than teacher salary cost.
3. Cost of general administration.
4. Cost of maintenance and operation of educational establishments.
5. Cost of books.
6. Welfare cost (school meal etc.).
7. Auxiliary cost (transportation etc.).
8. Scholarships and stipends.
9. Cost of instructional materials.

The non-recurring head of expenditure included the following sub-heads of expenditure. (18, pp. 35-36.)

1. Cost of site for schools.
2. Cost of the area for building, teaching and common facilities.
3. Cost of area for building laboratories.
4. Cost of area for building auditoria and gymnasia.
5. Cost of area for building workshops.
6. Cost for furniture and equipment for teaching and common facilities, for laboratories, auditoria, gymnasia, workshops and other school facilities.
7. Cost of building schools.
8. Cost of site for student residence.
9. Cost of building student residence.
10. Cost of furniture and other equipment for student residence.
11. Cost of site for teacher residence.

12. Cost of building teacher residence.
13. Cost of furniture and equipment for teacher residence.

Some additional factors of cost included the expences for the following: (18, p. 36.)

1. Drainage works.
2. Roads, paths and hard area for games.
3. Water, gas and electric mains.
4. Site layout and planting.
5. Boundary walls and fencing.
6. Playing field preparation including excavation.
7. Care taker's house.
8. Cycle sheds and green houses.
9. Other unusual items like electricity sub-stations.
10. Design and architectural fees.

The Teachers' Training Colleges maintained the following heads of expenditure: (8, pp. 1-3.)

1. Pay of the officers.
2. Pay of the establishment.
3. Allowances and Honoraria.
4. Contingencies.
5. External expenditures.

The first head "Pay of the officers" had sub-categories such as pay of the principal, senior lecturers, junior lecturers, professors, senior instructors and instructors. Leave salaries, and deducations were the other sub-categories.

The second head of expenditure "Pay of the establishment" maintained different sub-heads such as pay of the Master, Mistresses, laboratory assistants, librarians, lecturers, clerks, and servants. Leave salaries and deductions were other sub-categories.

The third main head, "Allowances and Honouraria" included fixed travelling allowance, other travelling allowance, big town compensatory allowance, house rent allowance, and other allowances.

The fourth main head "Contingencies" included telephone charges, rents, rates, taxes, garden recurring charges, liveries to peons, purchase of furniture and apparatus, cost of books and periodicals and other contingencies.

The last head "External expenditure" had various sub-categories like iron, cement, coal, machinery, spare parts, scientific equipment, medicines, books, journals and other miscellaneous items.

The Institute of Education and Research, Lahore maintained various heads of expenditure: (1) establishment, (2) allowances, (3) provident fund contribution, (4) text-books, (5) library, (6) equipment furniture and repairs, (7) instructional materials, (8) contingencies, (9) entertainments, (10) printing, (11) electricity, (12) maintenance of buildings, (13) student allowances, (14) travelling allowances, (15) maintenance of vehicles, (16) telephone, (17) uniforms for servants, (18) hospitalization and (19) gold medals, (9, p. 3.)

The information about the heads of income and expenditure were obtained from the published documents and budget estimate forms in the

case of Institute of Education and Research, Lahore and Teachers' Training Colleges. Such printed budget forms were not available with the College of Education, Peshawar and Institute of Education, Hyderabad. However these two institutions had their heads of income and expenditure in their ledgers. The data obtained from the ledgers were presented at the appropriate place in Chapter IV.

To sum up, the factors of cost in the educational institutions were found to be population, construction, teachers, school equipment, mid-day meal, transportation, administration and free supply of text-books. All these factors of cost might be categorised under the recurring and non-recurring heads of expenditure. The heads of expenditure maintained in the Teachers' Training Institutions were salaries, allowances, contingencies, text-books, library, instructional materials, equipment, building maintenance, hospitalization and some external expenditures.

The Asian Model

In this section a brief introduction to An Asian Model of Educational Development: Perspectives for 1965-80 has been given. The Ministers of Education and Ministers responsible for economic planning of the Member States of UNESCO in Asia, held a meeting in Bangkok in November 1965, and approved the draft of the Model with the following three purposes: (18, p. 9.)

1. It was an attempt to visualise in quantitative terms the perspectives of educational development in Asia up to 1980,

taking into consideration the past and the present situation.

2. It was designed to illustrate the interrelationship of some of the main factors involved in educational development and to show how they might be viewed in different combinations.
3. It sought to draw attention to some of the important implications for educational development that became evident when specific data were examined systematically and quantitatively as had been done in the Model.

This Model comprised of three chapters. The first chapter dealt with the general features of the demographic, economic, and social situation in the region. The population in the region had been estimated to rise from 824 millions in 1962 to 1970 millions by 1980. (18, p. 12.) As a result of the population growth, rapid expansion in the educational systems of the countries had been found. The chapter also dealt with the limitations of the member states in the educational improvement and expansion.

The second chapter was the main body of the document. It gave the assumptions, methodology, a number of formulae, and projections. The formulae aimed at estimating: (1) school enrolment, (2) teacher stock and requirements, (3) enrolment in teacher training institutions, (4) literacy and adult education and (5) costs. Several formulae were given and used to make educational projections for the Member States of UNESCO. The projections were made for years 1970, 1975 and 1980. The

6. projections were made for enrolment, output of teachers, recurring cost, capital cost, total cost by level and type of education, cost of education

in relation to gross national product, educational output, labour force by occupational group and educational attainments.

The third chapter discussed the implications of the Model, the problems of educational development, problems of wastage and shortage of the trained teachers, need for practical and functional research, functional literacy, technical education, civic education, female education, agricultural education and science education.

In the Model the Member States of UNESCO were classified into A, B and C Groups with reference to the time they would likely require to achieve seven years of compulsory schooling. These were:

- A. Those countries which expected to achieve seven years of compulsory schooling after 1980. This group included Afghanistan, Laos and Nepal.
- B. Those countries which were likely to achieve the goal around 1980. This group included Burma, Cambodia, India, Indonesia, Iran, Mongolia, Pakistan and Republic of Viet-Nam.
- C. Those countries which might achieve the goal before 1980. This group consisted of Ceylon, Republic of China, Republic of Korea, Malaysia, Philippines, Singapore and Thailand.

The system of education had been divided into three levels. The first level of education system covered Grades I to VII, second level from Grades VIII to XII and the third level comprised of the grades beyond Grade XII.

6. The concept of costs as used in the Model was not exactly identical with the concept of costs in the strict economic sense.

It did not cover the boarding, clothing and accommodation borne by the family. Also opportunity costs, representing the estimated loss of income from fore-gone employment opportunities were not included.

The term "Costs" had been used to denote as to what should normally be the value of goods or services and the term "Expenditure" as to what was actually spent. (18, p. 59.)

According to the Model the recurring cost had per-pupil cost as a basic unit. It was affected by three main factors: (1) the average annual salary of the teachers, (2) the pupil teacher ratio and (3) the proportion of the teacher salaries to total recurring costs. Recurring costs other than salaries included charges for that part of general administration and supervision which could be allocated by level and type of education, maintenance, and operation of educational establishments, instructional materials, libraries and non-teaching staff. (18, p. 59.)

Contrary to what happened in recurring costs, the capital costs had no tendency to rise. On the other hand they might decrease as a result of improved productivity and better designing. (18, p. 64.)

Projections

In this section relevant projection studies have been discussed briefly.

UNESCO made projections for the member states up to 1980 taking 1964 as the base year. These estimates of the future development of education in the region were not mere statistical

projections of the past trend but they were based on certain assumptions and targets. The data pertaining to cost projections of Teacher Training Programmes of Group A countries of UNESCO have been presented in Table I. (18, pp. 66-67.)

TABLE I

ESTIMATED TOTAL COSTS FOR TRAINING TEACHERS IN THE GROUP A COUNTRIES OF UNESCO IN 1970, 1975 AND 1980 WITH 1964 AS BASE YEAR

(in thousand U.S. dollars)						
Teacher Training for	Year	Recurring cost	Stipends	Recurring cost	Capital cost	Total cost
First level	1964	213	101	314	-	314
	1970	458	320	778	-	778
	1975	634	787	1421	-	1421
	1980	934	1947	2881	-	2881
Second level	1964	450	-	450	380	830
	1970	763	-	763	881	1644
	1975	1920	-	1920	1069	2989
	1980	3812	-	3812	1787	5599

The data revealed that total cost for training teachers for first level of education in Group A countries of UNESCO would be \$2,881,000 in 1980 as compared to \$314,000 in 1964. Similarly the projected cost for training teachers for second level of education was expected to be \$5,599,000 in 1980 as against \$830,000 in 1964. Thus under these projections

the expenditure on teacher education for both levels was expected to rise about eight times in 1980 as compared to the cost of teacher training in 1964 in the Group A countries of UNESCO.

The cost projections for the Teacher Training Programmes in Group B countries of UNESCO have been presented in Table II.

(18, pp. 68-69.)

TABLE II

ESTIMATED TOTAL COSTS FOR TRAINING TEACHERS IN GROUP B COUNTRIES OF UNESCO IN 1970, 1975 AND 1980 WITH 1964 AS BASE YEAR

(in thousand U.S. dollars)

Teacher Training for	Year	Recurring Cost	Stipends	Recurring Cost	Capital cost	Total Cost
First level	1964	31251	29206	51457	-	51457
	1970	37594	32760	70354	-	70354
	1975	28464	40871	69335	-	69335
	1980	17974	39853	57827	-	57827
Second level	1964	99326	-	99326	45494	144820
	1970	183431	-	183431	63413	246844
	1975	267489	-	267489	59671	327160
	1980	329581	-	329581	56014	385595

The capital costs for the Group B countries were projected for the teacher education for second level only. These costs for the first level were not given for both Groups A and B countries.

The reason might be that the demand for the expansion in teacher education for the first level was not expected to be so pressing as was expected for the second level of education.

The cost projected for the second level teacher education for the Group B countries in 1980 would be about three times the cost of 1964, whereas there was not much difference between the cost figure for 1964 and that of 1980 for the first level teacher education.

The data pertaining to cost projections of the Teacher Training Programmes of Group C countries of UNESCO have been presented in Table III. (18, pp. 70-71.)

TABLE III

ESTIMATED TOTAL COSTS FOR TRAINING TEACHERS IN GROUP C COUNTRIES OF UNESCO IN 1970, 1975 AND 1980 WITH 1964 AS BASE YEAR

(in thousand U.S. dollars)						
Teacher Training for	Year	Recurring cost	Stipends	Recurring cost	Capital cost	Total cost
First level	1964	7555	7355	14910	-	14910
	1970	5235	6966	12201	-	12201
	1975	2809	6247	9056	-	9056
	1980	3144	11057	14201	-	14201
Second level	1964	44632	-	44632	27380	72012
	1970	58254	-	58254	1680	59934
	1975	65115	-	65115	7990	73105
	1980	245949	-	245949	34230	280179

These projections revealed that the total cost for teacher training for the first level of education in Group C countries in 1980 would be almost the same as was the actual cost in 1964 but the estimated cost for teacher training in 1980 for second level of education was estimated to be about four times as compared to the cost figure of 1964.

The cost projections presented in the Model showed that the process of educational development would involve substantial increase in the volume of educational expenditure. The total educational costs of the region would increase from 2.9 billion U.S. dollars in 1964 to 9.4 billion dollars by 1980, representing an average annual increase of 7.5 per cent.

Zaki made cost projections for primary, middle, high, intermediate, higher general and higher professional education. (25, p. 83.) The Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes were included in the higher professional education. The cost projections made by Zaki revealed that the total expenditure for higher professional education for the whole of Pakistan would be Rs.2.9 billion in 1986 as compared to Rs.1.0 billion in 1966. Thus the cost figure of 1986 showed 190 per cent increase over the cost of higher professional education in 1966. The separate cost figures for the Teacher Training Programmes were not given and there was no mention of the separate cost figures for each wing of Pakistan. The total educational programme in Pakistan as suggested by Zaki would require an expenditure of Rs.1.5 billion in 1966, Rs.2.3 billions in

1971, Rs.3.6 billion in 1976, Rs.5.0 billion in 1981 and Rs.8.4 billion in 1986. (25, p. 96.)

Roy made the cost projections for the Teacher Training Programmes for achieving following goals in East Pakistan. (16, pp. 3,36.)

1. Achieving universal primary education by 1980.
2. Achieving universal education up to Class VIII by 1985.
3. Giving vocational and technical education to 50 per cent of Class IX enrolments by 1980.

According to these projections it was estimated that Rs.1,101 lakh would be needed in 1988 for Teachers' Training Colleges. This cost was five times the amount of Rs.222 lakh, needed for these Teachers' Training Colleges in 1970, under the same projections. This cost of Teachers' Training Colleges did not include the cost of training teachers for vocational education.

CHAPTER III

METHODS OF THE STUDY

The methods of the study involved document analysis, survey, interviews and projection calculations. These steps have been discussed below.

Document Analysis

Relevant documents were analysed to get the information for the projections. Cost projections for the Teacher Training Programmes could be made on the basis of the per-pupil costs and the enrolment projections for the Teachers' Training Institutions. These enrolment projections for the Teachers' Training Institutions could be calculated with the help of the secondary school enrolments, secondary school pupil-teacher ratio, the fraction of the trained graduate teachers not joining the profession, the fraction of these teachers leaving the profession and the fraction of the enrollees of the Teachers' Training Institutions completing the training programmes. These data were available from the ledgers maintained by the Teachers' Training Institutions, Educational Statistics published by the West Pakistan Bureau of Education and Pakistan Education Index (1970). Hence these relevant documents were analysed to project the cost for the Teacher Training Programmes.

Survey

To survey the Teachers' Training Institutions, a questionnaire (Appendix A) was prepared with the following purposes:

1. To ascertain the financial position of the institutions

offering Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan.

2. To identify the sources of income and to determine the amounts of income of these institutions from different sources during the fiscal years 1966-67, 1967-68 and 1968-69.
3. To identify the heads of expenditure and the actual amounts spent under different heads during the fiscal years 1966-67, 1967-68 and 1968-69.
4. To find the process of financing these institutions.
5. To elicit suggestions from the heads of the Teachers' Training Institutions for the improvement over prevalent financing process.
6. To ascertain the number of teachers trained in these institutions in the academic years 1966-67, 1967-68 and 1968-69.
7. To find the factors of cost and to determine the amounts of expenditure under recurring and capital heads in the years 1966-67, 1967-68 and 1968-69.

Form of the questionnaire. The questionnaire consisted of two parts. The first part running up to the thirtieth item was to be filled in by the heads of the Teachers' Training Institutions. This part of the questionnaire had the following main sections, each dealing with different items: (1) identifying data about the Teachers' Training Institutions, (2) rates of fees, (3) financial help to students, (4) land area of the institution and its cost, (5) income,

(6) enrolments and (7) expenditure.

The first four items of the questionnaire were devoted to collect the information about the name of the institution, its location, the year of its establishment, the nature of the training programmes offered and the admission requirements to these training programmes. In the section about the fees information was collected about the annual rates of tuition fee, examination fee, union fee, red cross fee, book fee, sports fee, or any other kind of fee. In order to collect the information about the financial help obtained by the students through different sources, the questions were set in such a form that the relevant information were collected about different kinds of financial help, like stipends, scholarships, free studentships, lump grants, rent-free residence or any other kind of financial help received by the students, either from the institution, or from the government or from any other source during the fiscal years 1966-67, 1967-68 and 1968-69. Information regarding the number of students receiving these aids and the amount received by them was also collected. Separate proformas for each of the fiscal years 1966-67, 1967-68 and 1968-69 were made to collect the required information.

The question about the land area of the institutions was constructed in such a way that information about the total area of the institutions, the area covered by buildings and the area not covered by buildings were obtained in square feet units. A question was set to

ascertain the cost price of the land area of each institution. Another question was set to know the estimated price per unit of the institution land at the time of collection of these data. There was a provision to know the prices of the institution lands per unit area at the time of data collection, both from the institution heads and the neighbouring land lords and an average of the two prices gave the approximate price of the institution land.

The next section of the questionnaire was about the income of the institution. Different questions were constructed to ascertain the amounts of income of the institutions during the fiscal years 1966-67, 1967-68 and 1968-69 from different sources, like tuition fee, other fees, gifts, endowments, government grants or any other source. A number of other questions were constructed to find the amounts of grants from the central and provincial governments under the recurring and non-recurring heads and to specify the amounts given to the institutions under the sub-heads of the recurring head, such as salary, establishment, and other sub-heads for the fiscal years 1966-67, 1967-68 and 1968-69. A question was set to ascertain the grants these institutions expected to get for the year 1969-70. The information about the total enrolment of each institution in the academic years 1966-67, 1967-68 and 1968-69 was also collected. Care was taken to record the number of students enrolled, number of students completing half of the programme, number of students who completed the programme and number of these who succeeded. This section on income helped to identify the sources of

income of the Teachers' Training Institutions.

The next section of the questionnaire dealt with the expenditure. Questions were designed in such a way that the data about the amounts of recurring and non-recurring expenditures for the fiscal years 1966-67, 1967-68 and 1968-69 were collected. Under the recurring expenditure head, the sub-heads were salaries of the teaching staff, salaries of the personnel other than teachers, salaries of non-teaching administrators, maintenance, establishment, library materials, welfare cost, transportation cost, amounts of scholarships and stipends, instructional materials and free studentships. Under the capital expenditure head, the sub-heads were cost of site for the institution, cost of building teaching facilities, laboratories, auditoria, gymnasia and workshops, cost of furniture and cost of construction.

Interviews

The second part of the questionnaire consisting of items thirty-one to forty-one served as a structured interview schedule and dealt with: (1) process of receiving financial help, (2) financial problems and (3) possible solutions to these problems. Items thirty-one to thirty-six aimed at knowing as to how the budget estimates were prepared, sent to the government for approval and what percentage of the estimated budget was granted. Next three questions were designed to know some special features of the financial process. The last two questions were constructed to know the problems faced by the heads of the institutions in getting financial aids from the government and to

elicit suggestions from the heads of the Teachers' Training Institutions to overcome the problems faced by them in getting financial aids.

Collection of data. The writer personally visited Teachers' Training Institutions included in the study. The ledgers maintained for accounts were studied and required data were collected. The heads of the Teachers' Training Institutions were interviewed on the basis of interview schedule included in the second part of the questionnaire.

Treatment of data. A portion of the data was used to determine the structure and nature of the financing system of Teachers' Training Institutions. The sources of income and heads of expenditure maintained by these Teachers' Training Institutions were identified and discussed. The information about the nature of the training programmes in different institutions, admission requirements for these programmes, rates of fees, and the financial help to students were collected and have been presented in the relevant chapter. The financial process of Teachers' Training Institutions, financial problems and their likely solutions, as suggested by the heads of the institutions have also been presented.

Projection calculations

According to the Asian Model cost for Teacher Training Programmes could be projected when enrolments of the Teachers' Training Institutions were known. Again as the enrolments for the Teachers' Training Institutions depended upon the teachers needed for school

enrolments, hence school enrolment projections were also needed. As the teachers prepared through these Teacher Training Programmes included in the study go to teach students in the secondary schools, the enrolment projections for Classes VI to X in West Pakistan from the year 1969 to 1990 were made. These secondary school enrolment projections served as basic data for the enrolment projections for Teachers' Training Institutions which, in turn, served as a base for the cost projections for Teacher Training Programmes included in the study. The methods of making the school enrolment projections and enrolment and cost projections for Teacher Training Programmes have been described below.

School enrolment projections. Two types of enrolment projections for Classes VI to X in West Pakistan were made for the period 1969 to 1990.

1. School enrolment trend projections. These projections were made on the basis of enrolments in Classes VI to X in West Pakistan from the year 1948 to 1967. The trend of the past enrolment growth was observed from the graphic representation (Figure 1.) for determining the applicability of the appropriate formula for the projections. For this projection it was decided to use the following semi-logarithmic equation, which appeared to represent closely the curve showing the past trend of enrolments in Classes VI to X in West Pakistan.

$$\text{Log } Y = a + bX$$

where Y = projected enrolments for Classes VI to X

X = year

a = constant

b = constant (co-efficient of regression).

The secondary school enrolments were projected for the years 1969 to 1990 by an appropriate regression analysis applying the above mentioned equation.

2. School enrolment projections for achieving universal education up to Class VIII by 1985. These projections were made with the objective of bringing all eleven, twelve and thirteen year age groups in Classes VI, VII and VIII respectively by 1985.

The actual enrolments in these classes in 1968 and the projected enrolments for the year 1985, required for universal education up to Class VIII by 1985 were used to calculate the required enrolments in those classes in each of the years between 1968 and 1985 by linear interpolation. The fractions of the enrolments in Class VIII in the years 1964 to 1967, joining Class IX in the following years were determined and an average of these fractions was used to calculate the enrolments in Class IX during the projection period. Similarly the fractions of the enrolments in Class IX in the years 1964 to 1967 joining Class X in the following years were calculated and an average of these fractions was used to determine the enrolments of Class X during the projection period. Thus the school

enrolment projections for the period 1969 to 1990 for achieving universal education by 1985 were made.

Enrolment projections for the Teachers' Training Institutions.

The second phase of the projections was to calculate the enrolments for the Teachers' Training Institutions offering Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan. For this purpose the pupil-teacher ratio in the secondary schools of West Pakistan in the year 1967-68 was calculated. This ratio was used to calculate the year-wise total number of teachers required in the secondary schools of West Pakistan, during the projection period. The additional teacher requirement was used to estimate the enrolments for the Teachers' Training Institutions taking into consideration the following factors:

1. Fraction of the new teachers not coming directly from the Teachers' Training Institutions offering Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan.
2. Fraction of the enrolled students successfully completing these Teacher Training Programmes.
3. Fraction of the trained graduate teachers not joining the profession.

Considering these factors the following two types of enrolment projections for the Teachers' Training Institutions were made

up to the year 1989.¹

1. Enrolment projections for these Teachers' Training Institutions calculated from the school enrolment trend projections.
2. Projections calculated from the school enrolment projections for achieving universal education up to Class VIII by 1985.

A third type of enrolment projection for these Teachers' Training Institutions was made on the basis of the past trend of the enrolment of these Teachers' Training Institutions. To make these trend projections it was decided to use the following equation which appeared to represent closely the curve (Figure 3.) showing the past trend of the output of the Teachers' Training Institutions in West Pakistan.

$$Y = a + bX$$

where Y = projected enrolments for the Teachers' Training Institutions

X = year

a = constant

b = constant.

¹ These enrolment projections for Teacher Training Programmes were made up to 1989 and not up to 1990 because the teachers would be admitted one year earlier in 1989 for the school enrolments in 1990.

For making the first two types of enrolment projections for Teacher Training Programmes the methodology involved in the Asian Model was used. The Model presented formulae for calculating teacher requirements and enrolments for Teachers' Training Institutions. The writer did not use the formulae of the Asian Model as such. Some modifications were made according to the availability of the data. In making modifications help was also taken from A Model For Educational Planning in East Pakistan prepared by George B. Kleindorfer and Lalit M. S. Roy. (12, pp. 12-14.) The modified formulae and their descriptions have been given as under.

The number of teachers required for Classes VI to X in West Pakistan was determined by dividing the total enrolment in these classes in a year by the pupil-teacher ratio. It has been shown by the following formula:

$$T(y) = ET(y)/f(y)$$

where

$T(y)$ = number of the teachers needed for teaching Classes VI to X in the year y

$ET(y)$ = total enrolment of Classes VI to X in the year y

$f(y)$ = pupil-teacher ratio in Classes VI to X in the year y .

The number of additional teachers in any year was the difference between the total number of the required teachers in that year and the number of the teachers remaining in service from the previous year. To calculate the number of additional teachers the following formula was used:

$$R(y) = T(y) - [1 - z(y-1)] T(y-1)$$

where

$R(y)$ = number of additional teachers required for teaching
Classes VI to X in the year y

$T(y)$ = number of teachers needed for teaching Classes VI to X
in the year y

$z(y-1)$ = fraction of teachers leaving the school system from
Classes VI to X in the year $y-1$ for all reasons

$T(y-1)$ = number of teachers needed for Classes VI to X in the
year $y-1$.

The enrolments in Teachers' Training Institutions were projected in such a way that the requirements for additional teachers for Classes VI to X in West Pakistan were fulfilled. It was taken into consideration that all enrollees in these Teachers' Training Institutions did not successfully complete the programmes, that all graduates did not enter teaching and that a fraction of the secondary school teachers did not come from these Teachers' Training Institutions. The following formula was used to calculate the enrolments of these Teachers' Training Institutions.

$$ETTR(y) = \frac{[1 - MIO(y+1)] R(y+1)}{PL(y) [1 - SIG(y)]}$$

where

$ETTR(y)$ = enrolment in year y in the Teachers' Training
Institutions

$NH0(y+1)$ = fraction of the new teachers in year $y+1$ not coming directly from the Teachers' Training Institutions

$PL(y)$ = fraction of enrolees of the Teachers' Training Institutions successfully completing the programmes in the year y

$SIG(y)$ = fraction of the trained graduates from these institutions, not entering the profession in the year y .

Cost projections. The third phase of the projections dealt with the cost estimates for the Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan. The following three types of cost projections were made.

The first set of cost projections was made taking the school enrolment trend projections as the basic data. These projections gave cost for training graduate teachers required to teach Classes VI to X in case the trend of growth in the school enrolment remained the same as was observed in the past twenty years.

The second type of cost projections showed the cost estimates in training graduate teachers if universal education up to Class VIII was to be achieved by 1985.

The third type of cost projections was made for the enrolments of Teachers' Training Institutions based on the past trend of the enrolments in these institutions. These cost projections gave the costs to be incurred in training graduate teachers in case the past trend of enrolments in the Teacher Training Programmes continued in future.

To calculate the cost projections the methodology given in the Asian Model was used. The following formula was used to express the per-pupil recurring costs: (18, p. 34.)

$$\begin{aligned} v_y^{(t,g)} = & \widehat{va}_y^{(t,g)} + \widehat{vb}_y^{(t,g)} + \widehat{vc}_y^{(t,g)} + \widehat{vd}_y^{(t,g)} + \widehat{ve}_y^{(t,g)} + \\ & + \widehat{vf}_y^{(t,g)} + \widehat{vg}_y^{(t,g)} + \widehat{vh}_y^{(t,g)} + \widehat{vi}_y^{(t,g)} \end{aligned}$$

where

v = per-pupil recurring cost

$\widehat{va}$ = per-pupil teacher-salary cost

$\widehat{vb}$ = per-pupil personnel cost, other than teacher-salary cost

$\widehat{vc}$ = per-pupil cost of general administration

$\widehat{vd}$ = per-pupil cost of maintenance and operation of educational establishments

$\widehat{ve}$ = per-pupil cost of books

$\widehat{vf}$ = per-pupil welfare cost

$\widehat{vg}$ = per-pupil auxiliary cost

$\widehat{vh}$ = per-pupil scholarship and stipend cost

$\widehat{vi}$ = per-pupil cost of instructional materials, other than books.

The per-pupil costs for the items shown in this formula were actually averages of the gross costs divided by the enrolment. Thus, for example, $\widehat{va}$ was equal to the total teacher-salary cost for a type-grade divided by the enrolment in that type-grade. As the Teacher Training Programmes were of the same type and the data

available for the recurring expenditure did not provide separate information for salaries, transportation and such other sub-heads of expenditure, hence the formula for calculating per-pupil recurring expenditure was modified as below:

$$RP(y) = RC(y) / ET(y)$$

where

$RP(y)$ = per-pupil recurring cost for the Teacher Training Programmes during the year y

$RC(y)$ = total recurring cost for the Teacher Training Programmes during the year y

$ET(y)$ = enrolment in these Teacher Training Programmes during the year y .

With the help of this formula per-pupil recurring costs for the years 1966-67, 1967-68 and 1968-69 were calculated and an average of these three per-pupil costs was used for the projections. An annual inflation rate¹ of 2.5 per cent was used to calculate per-pupil recurring costs for each year during the projection period with 1968 as the base year.

In the Asian Model the following formula was used to calculate the total recurring cost of a programme. (18, p. 45.)

¹The inflation rate of 2.5 per cent was used in various studies. (12, p. 91:15, p. 34: 16, p. 22.)

$$V_y^{(t,g)} = v_y^{(t,g)} E_y^{(t,g)}$$

where

$V_y^{(t,g)}$ = the total recurring cost of a type and grade in a particular year y

$v_y^{(t,g)}$ = per-pupil recurring cost of a type and grade in a particular year y

$E_y^{(t,g)}$ = enrolment of a type and grade in a particular year y .

As the present study had not separate type and grade problem the formula was modified as follows:

$$RC(y) = RP(y) ET(y)$$

where

$RC(y)$ = total recurring costs for the Teacher Training Programmes included in the study for the year y

$RP(y)$ = per-pupil recurring cost for these Teacher Training Programmes for the year y

$ET(y)$ = enrolment of these Teacher Training Programmes in the year y .

As regards the calculations of capital costs there was a need to know per-pupil-place capital cost and the additional pupil places required each year in the projection period. The Asian Model showed the use of the following formula to obtain the cost in per-pupil-place terms. (18, p. 45.)

$$u_y(t, g) = \hat{u}_y(t, g) + c_y(t, g) q_y(t, g) + \hat{u}_k_y(t, g)$$

where

u = per-pupil-place capital cost

$\hat{u}_a$ = cost per-pupil-place for site

c = cost per unit area for building

q = per-pupil-place area requirements for building

$\hat{u}_k$ = cost per-pupil-place for furniture and equipment.

The above formula given in the Model was modified according to the availability of the data and the modified formula was as follows:

$$CP(y) = CA(y) + CB(y) + CD(y)$$

where

$CP(y)$ = per-pupil capital cost for the Bachelor of Education,
Master of Education and Master of Arts in Education
Degree Programmes in West Pakistan in the year y

$CA(y)$ = per-pupil capital cost for construction for these
Teacher Training Programmes in the year y

$CB(y)$ = per-pupil capital cost for library books for these
Teacher Training Programmes in the year y

$CD(y)$ = per-pupil capital cost for furniture and equipment for
these Teacher Training Programmes in the year y .

The second information needed to calculate the capital costs was about the additional pupil-places required each year during the projection period. These additional pupil-places meant the additional

facilities in terms of pupil-places to be provided in any year for meeting the increasing enrolments in the next year and for replacing that portion of the existing pupil-places which would be obsolete. The Asian Model gave the following formula for calculating the additional pupil-places. (18, p. 37.)

$$D_y^{(t,s)} = E_{y+1}^{(t,s)} - (1 - x_y^{(t,s)}) E_y^{(t,s)}$$

where

D = number of the pupil-places to be completed for the following year

x = proportion of the existing pupil-places to be replaced for the following year.

This formula was also modified for the same reasons given earlier. The modified formula was as follows:

$$D(y) = ET(y+1) - [1 - X(y)] ET(y)$$

where

$D(y)$ = number of the pupil-places to be completed for the Teacher Training Programmes in the year y for the following year

$ET(y+1)$ = total enrolment of the Teacher Training Programmes in the year $y+1$

$X(y)$ = fraction of the existing pupil-places to be replaced in the year y

$ET(y)$ = total enrolment in the Teacher Training Programmes in the year y .

The total capital cost for a year in a programme was the product of per-pupil capital cost for that programme in that year and

the number of the pupil-places to be completed for the same level in the same year. The Asian Model gave the following formula to obtain the total capital cost. (18, p. 36.)

$$U_y(t, g) = u_y(t, g) Q_y(t, g) + \dot{u}_y(t, g) \dot{Q}_y(t, g) + \bar{u}_y(t, g) \bar{Q}_y(t, g)$$

where

U = total capital cost

u = per-pupil-place capital cost

$\dot{u}$ = per-resident-place capital cost for student residences

$\bar{u}$ = per-resident-place capital cost for teacher residences

Q = number of the pupil-places to be built

$\dot{Q}$ = number of the resident-places to be built for the students

$\bar{Q}$ = number of the resident-places to be built for the teachers.

According to the nature of the availability of data the following modified formula was used to project the capital costs for the Teacher Training Programmes included in the study for the period 1969 to 1988.¹

$$CC(y) = CP(y) D(y)$$

where

$CC(y)$ = total capital cost for the Teacher Training Programmes
in the year y

¹As the pupil-places were to be started one year before the trainees were given admission to the institutions, hence the capital cost for the Teachers' Training Institutions in 1989 were to be provided in 1988. In these calculations one year construction programme was assumed.

$CP(y)$ = per-pupil-place capital costs for the Teacher
Training Programmes in the year y

$D(y)$ = number of the pupil-places to be completed for the
Teacher Training Programmes in the year y .

An annual inflation rate of 2.5 per cent was used to obtain the capital costs for the years 1969 to 1988 with 1968 as the base year.

As far as the total cost for a level in a year was concerned, it was the sum of the total recurring cost and the total capital cost for that level in the same year. The total cost was computed by the following formula in the Asian Model. (18, p. 45.)

$$W_y(t,s) = V_y(t,s) + U_y(t,s)$$

where

W = total costs

V = recurring costs

U = capital costs.

The writer used the following modified formula for calculating the total cost for the Teacher Training Programmes included in the study. These modifications were necessary for the same reasons given for the recurring and capital costs.

$$C(y) = RC(y) + CC(y)$$

where

$C(y)$ = total cost for the Teacher Training Programme in the
year y

$RC(y)$ = total recurring cost for the Teacher Training
Programmes in the year y

$CC(y)$ = total capital cost for the Teacher Training
Programmes in the year y .

By the use of the above modified formulae the enrolment and
cost projections for the Teacher Training Programmes were made and have
been presented in the following chapter.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The data obtained for the study have been presented in this chapter and analysed. The analysis has been done in two parts:

(1) financial set up and (2) projections.

I. FINANCIAL SET UP

This part deals with the financial position of the Teachers' Training Institutions and describes as to how these institutions receive the financial aids from the government. The data have been presented under the headings: (1) identifying data, (2) rates of fees, (3) financial help to students, (4) land area of each institution and its cost, (5) income, (6) enrolments, (7) expenditure, (8) process of receiving financial help and (9) financial problems and their probable solutions.

Identifying data

The first four items of the questionnaire were designed to collect information about the name of the institution, its location, the year of its establishment and the nature of the Teacher Training Programmes offered by the institution. These data have been presented in Table IV.

TABLE IV

TEACHERS' TRAINING INSTITUTIONS, THEIR LOCATION, YEAR OF ESTABLISHMENT AND THE NATURE OF PROGRAMMES

Name of institution :	Location :	Year of establishment :	Programme :
Lady MacLagan Training College	Lahore, Punjab University	1933	B.Ed.
Central Training College	Lahore, Punjab University	1881	B.Ed.
Government Training College	Lyallpur, Punjab University	1961	B.Ed.
Government Training College	Multan, Punjab University	1963	B.Ed.
Government Training College	Sukkur, Sind University	1962	B.Ed.
College of Education	Peshawar, Peshawar University	1950	B.Ed., M.Ed.
Institute of Education	Hyderabad, Sind University	1962	B.Ed., M.Ed.
Government Teachers' Training College	Karachi, Karachi University	1954	B.Ed., M.Ed.
Institute of Education and Research	Lahore, Punjab University	1959	M.Ed., M.A.(Edu.)

Table IV shows that out of these nine institutions five were under the jurisdiction of the Punjab University, two under Sind University, one under Karachi University and one under Peshawar University. It can be seen from this table that only two institutions were in existence before 1947 and both of them were at Lahore. The remaining seven institutions were established within a period of

fourteen years after 1947.

The data show that the Teachers' Training Colleges at Lahore, Lyallpur, Multan and Sialkot offered Bachelor of Education Degree Programme of one year duration. The minimum qualification required for admission to this programme was the Bachelor's Degree in Arts or Science or an equivalent degree. Teachers' Training Institutions at Hyderabad, Karachi and Peshawar offered Bachelor of Education and Master of Education Degree Programmes. Bachelor of Education Degree Programme was of one year duration and the minimum requirement for admission to it was the Bachelors' Degree in Arts or Science or an equivalent degree. College of Education, Peshawar offered Master of Education Degree Programme of one year duration and only graduates in education (B.Eds.) could get admission to it. Training College, Karachi offered Master of Education Degree Programme of two year duration and the graduation in education was the minimum requirement for admission to this programme. Institute of Education, Hyderabad offered two year programme for Master of Education Degree and the minimum qualification required for admission was the Bachelor's Degree in Arts or Science or an equivalent degree. Those who had a Bachelor's Degree in Education were admitted to the second year. Institute of Education and Research, Lahore offered Master of Education and Master of Arts in Education Degree Programmes. The former was of one year duration and the minimum requirement for the admission to this programme was the Bachelor's Degree in Education and a teaching experience of three years. This requirement of three years teaching experience could be relaxed to one

year if the candidate had a Master's Degree in Arts or Science or an equivalent degree. The later was of two years' duration and a Bachelors' Degree in Arts or Science or an equivalent degree was the minimum requirement for admission to this programme.

Rates of fees

The fifth and sixth items of the questionnaire were framed to collect information about the annual rates of tuition fee and other fees. These data have been presented in Table V.

Table V shows different fees collected by the institutions. The data revealed that no tuition fee was charged in the Teachers' Training Colleges at Karachi, Lahore, Lyallpur, Multan and Sukkur. College of Education, Peshawar, Institute of Education, Hyderabad, and Institute of Education and Research, Lahore charged tuition fee. The rate of the tuition fee was the highest at the Institute of Education and Research, Lahore.

The university fees included examination fee, university enrolment fee, university special fee and university cultural association fee. The institutions under the Punjab University charged Punjab University Sports Tournament Committee Fee and that has also been included in the university fees. The total annual rates of these fees varied from institution to institution. The students at the Institute of Education and Research, Lahore did not have to pay the university examination fee because of the internal system of examination.

TABLE V

ANNUAL RATES OF FEES IN THE TEACHERS' TRAINING INSTITUTIONS

Fees	T.T.C. : Lahore	T.T.C. : Lyallpur	T.T.C. : Multan	T.T.C. : Sialkot	College of : Education : Hyderabad	T.T.C. : Karachi	I.E.R. : Lahore
Tuition fee :	-	-	-	-	252	252	276
University fees	72	71	72	52	116	56	5
Union fee	55	66	66	25	31	12	95
Medical fee	11	8	8	12	-	-	12
Admission fee	4	4	4	10	4	10	-
Education Society Fund	-	-	-	-	-	20	-
Book fee	-	-	-	-	-	-	55
Other fees ¹	10	5	10	17	5	19	18
Total	152	154	154	167	408	298	461

¹"-" means that these fees were not charged.

¹Other fees include red cross, library membership fee, sports fee, magazine subscription, identity card fee, house examination fee and gown fee.

Union fee, medical fee and admission fee were also charged at different rates in different institutions. Training College, Karachi charged Education Society Fund at the rate of twenty rupees per annum per head and only the Institute of Education and Research, Lahore charged book fee at an annual rate of fifty-five rupees per head. Other fees which included red cross fee, magazine subscription, sports fee, library membership fee, identity card fee, house examination fee and gown fee were not charged in all the institutions. The students in the Teachers' Training Colleges had to pay less amounts of the fees as compared to those studying in College of Education, Peshawar, Institute of Education Hyderabad and Institution of Education and Research Lahore.

Financial help to students

The seventh item of the questionnaire aimed at collecting the information about the financial aid given to the students in the Teachers' Training Institutions during the fiscal years 1966-67, 1967-68 and 1968-69. These data have been presented in Table VI.

Table VI shows that during the fiscal year 1966-67 a financial aid amounting to Rs.323,509 was given to the students in the Teachers' Training Institutions included in the study. This financial help was given in the form of scholarships, stipends, lump grants and bursaries. Teachers' Training Colleges at Lyallpur and Sukkur and Institute of Education Hyderabad did not get grants from the government for the financial help to the students during the years 1966-67, 1967-68 and

TABLE VI

FINANCIAL HELP RECEIVED FROM DIFFERENT SOURCES BY THE STUDENTS OF TEACHERS' TRAINING INSTITUTIONS DURING THE FISCAL YEARS 1966-67, 1967-68 AND 1968-69

Institutions	1966-67		1967-68		1968-69	
	From : Government : grant	Total from : all sources : including : govt. grant :	From : Government : grant	Total from : all sources : including : govt. grant :	From : Government : grant	Total from : all sources : including : govt. grant :
T. T. C. Lahore (Female)	58656	58656	36037	36037	25225	25225
C. T. C. Lahore	96500	96500	96500	96500	96500	96500
T. T. C. Multan	38216	38216	43993	43993	42690	42690
College of Education, Peshawar	19710	23657	18900	38597	24345	53321
Institute of Education, Hyderabad	700	700	-	-	2150	2150
T. T. C. Karachi	22052	22052	22480	22480	25690	25690
I. E. R. Lahore	83728	83728	136498	136498	71110	72010
Total	319562	323509	354408	374105	287910	317786

"-" means that the financial help is not received.

1968-69. Teachers' Training Institutions within the jurisdiction of the Punjab University received about 87 per cent of the government grants for scholarship for the Teachers' Training Institutions in the year 1966-67.

During the fiscal year 1967-68 a financial help amounting to Rs.374,105 was given to the students in the Teachers' Training Institutions. The major source for the financial help to the students in these institutions was the government grants, which amounted to Rs.354,408 during the fiscal year 1967-68. Of this amount 88 per cent was received by the Teachers' Training Institutions at Lahore and Multan, which were under the jurisdiction of the Punjab University. The institutions at Hyderabad, Karachi and Peshawar received the remaining 12 per cent of the government grants for the scholarship during the year 1967-68. The students in the College of Education, Peshawar, however, received financial aids amounting to Rs.19,697 from the sources other than government grants. These other sources were Haripur Trust, North Waziristan, South Waziristan and Khyber, Kurram, Maimand and Malakand agencies.

During the fiscal year 1968-69 an amount of Rs.317,786 was received by the students in the Teachers' Training Institutions included in the study. Of this amount a grant of Rs.287,910 was obtained from the Government of West Pakistan. Out of this government grant for scholarships Teachers' Training Institutions at Lahore and Multan received about 82 per cent. Students in the College of Education, Peshawar received the financial aid of Rs.28,976 from the sources other

than government grants for scholarship during the year 1968-69.

Table VI shows that the amount of the financial aids to the Teachers' Training Institutions in the fiscal year 1968-69 was less than that of the fiscal year 1967-68. This downward trend was significantly seen in the amounts received by the Institute of Education and Research, Lahore and Lady MacLagan Training College, Lahore. The reasons as explained by the heads of these institutions were as under:

1. The Institute of Education and Research, Lahore which was established in 1959 with the help of foreign aid gave scholarships to the students at generous rates in the initial years but when it came under the control of the Punjab University, Lahore and the government had to finance it, the budget was gradually curtailed and financial aid to students was reduced.
2. Lady MacLagan Training College, Lahore had some day scholars during the fiscal year 1968-69. These day scholars were given stipends at a lower rate as compared to those who were residents.

Land area of the institution, its cost
and construction cost

This section comprising of items eight to eleven of the questionnaire aimed at collecting information about the land area of the institution, its actual cost, its approximate cost in the year 1969-70 and the actual cost of construction of these institutions. Table VII presents these information.

TABLE VII

LAND AREA OF THE INSTITUTION, ITS COST AND COST OF CONSTRUCTION

Institution	Total : area of the : institution : land : (in acres)	Approximate : price of land : per acre in : 1969-70 (in : thousand rupees):	Approximate total : price of the : institution land: : in 1969-70 (in : thousand rupees):	Actual cost of : construction up to : the end of 1968-69 : (in rupees)
T. T. C. Lahore (Female)	2.7	160.0	432.0	-
C. T. C. Lahore	26.3	160.0	4208.0	-
T. T. C. Lyallpur	36.0	88.0	3168.0	1309880
T. T. C. Multan	21.0	32.0	672.0	1309592
T. T. C. Sukkur	21.0	2.4	50.4	700000
College of Education, Peshawar	1.0	80.0	80.0	490561
Institute of Education, Hyderabad	1.0	92.0	92.0	-
T. T. C. Karachi	34.0	193.6	6582.4	1667000
I. E. R. Lahore	-	-	-	11560000
Total	143.0	-	15224.8	17037033

"-" means that either the data were not available or not reported.

Table VII shows that 143 acres was the area covered by all the Teachers' Training Institutions included in the study except Institute of Education and Research, Lahore, which did not report the total land area of the Institution. However it was reported that the building of the Institute of Education and Research, Lahore covered an area of 135620 square feet. The total area covered by building in all the Teachers' Training Institutions was about six lakh square feet.

It was found that the land was donated to the institutions or it was got free of cost. The approximate rates of the land of the institutions were ascertained from the heads of the institutions and from the neighbouring land lords and an average of these approximate rates was used to calculate the approximate price of the land area of the institutions in 1969-70.

This table also shows that an amount of Rs.17,037,033 was spent on the buildings of the six institutions. Training Colleges at Lahore were in existence even before 1947 and the pertinent records were not available. Institute of Education, Hyderabad also did not report the cost of building the institution.

Income

This section of the questionnaire consisted of items twelve to twenty-five. These items aimed at collecting information about the income of the institutions from endowments, investments, gifts, presents, tuition fee, other fees, government grants and grants from local bodies during the fiscal years 1966-67, 1967-68 and 1968-69. These data have been presented in Tables VIII, IX and X.

TABLE VIII

INSTITUTION-WISE TOTAL INCOME FROM ALL SOURCES DURING THE FISCAL YEAR 1966-67

Institution	(in rupees)						
	Operational : grants for salaries, equipment and allowances :	Scholarship : from all sources :	Grant for construction :	Income from endowments and investments :	Income from tuition : other fees :	Income from : income :	Total income :
T. T. C. Lahore (Female)	252706	58657	-	-	-	9418	320781
C. T. C. Lahore	358584	83500	-	-	-	30150	472234
T. T. C. Lyallpur	137841	-	-	4750	-	25149	167740
T. T. C. Multan	174072	38216	-	-	-	42431	254719
T. T. C. Sukkur	115731	-	-	-	-	5342	121073
College of Education, Peshawar	143372	42317	-	-	49886	12375	247950
Institute of Education, Hyderabad	334860	700	-	-	29550	2955	368065
T. T. C. Karachi	162680	22052	550000 ¹	-	-	9630	744362
I. E. R. Lahore	661675	89000	-	20090	76816	15019	862600
Total	2341521	334442	550000	24840	156252	152469	3559524

Estimated from an amount of Rs.1,667,000 spent on construction during the years 1966-67, 1967-68 and 1968-69.

"-" means no income from this source.

TABLE IX

INSTITUTION-WISE TOTAL INCOME FROM ALL SOURCES DURING THE FISCAL YEAR 1967-68

Institution	(in rupees)									
	: Operational : : grants for : : salaries, : : equipment and : : allowances :	: Scholarship : : from : : all sources : :	: Grant : : for : : construction : :	: Income : : from : : endowments : : and : : investments :	: Income : : from : : tuition : : fees :	: Income : : from : : other : :	: Total : : income : :			
T. T. C. Lahore (Female)	257926	36037	-	-	-	9670	303633			
C. T. C. Lahore	331328	83500	-	-	-	30150	444978			
T. T. C. Lyallpur	148336	-	-	4750	-	25149	178235			
T. T. C. Multan	178398	43993	-	-	-	42278	264669			
T. T. C. Sukkur	140500	-	100000	-	-	7767	248267			
College of Education, Peshawar	130041	38597	-	-	45864	11375	225877			
Institute of Education, Hyderabad	386214	-	-	-	40950	4095	431259			
T. T. C. Karachi	144548	22480	550000 ¹	-	-	7380	724408			
I. E. R. Lahore	671820	154745	-	23000	105610	21322	976497			
Total	2389111	379352	650000	27750	192424	159186	3797823			

¹ Estimated from an amount of Rs.1,667,000 spent on construction during the years 1966-67, 1967-68 and 1968-69.

"-" means no income from this source.

TABLE X

INSTITUTION-WISE TOTAL INCOME FROM ALL SOURCES DURING THE FISCAL YEAR 1968-69

Institution	(in rupees)									
	Operational : grants for salaries, equipment and allowances	Scholarship : from all sources	Grant for construction	Income from endowments and investments	Income from tuition fee	Income from other	Total income			
T. T. C. Lahore (Female)	230370	25226	-	-	-	10587	266183			
C. T. C. Lahore	349903	83500	-	-	-	30150	463553			
T. T. C. Lyallpur	137099	-	-	4750	-	25107	166956			
T. T. C. Multan	186103	42690	-	-	-	42238	271031			
T. T. C. Sukkur	180336	-	-	-	-	11804	192140			
College of Education, Feshawar	151203	53322	-	-	42064	10437	257046			
Institute of Education, Hyderabad	401661	2150	-	-	49635	5145	458591			
T. T. C. Karachi	179650	25890	567000 ¹	-	-	7320	779860			
I. E. R. Lahore	671820	158570	-	26600	70379	14094	941463			
Total	2486145	391348	567000	31350	162898	156882	3796823			

¹ Estimated from an amount of Rs.1,667,000 spent on construction during the years 1966-67, 1967-68 and 1968-69.

"-" means no income from this source.

It was found that no institution had any income from presents and gifts during the fiscal years 1966-67, 1967-68 and 1968-69. Teachers' Training College, Lyallpur had 9.5 acres of cultivated land, worth about Rs.950,000 in 1969-70 and it gave an income of Rs.4,750 per annum during the years 1966-67, 1967-68 and 1968-69. Institute of Education and Research, Lahore had an investment of Rs.850,000 and had an income of Rs.20,090, Rs.23,000 and Rs.26,600 during the years 1966-67, 1967-68 and 1968-69 respectively from this investment. Tuition fee was charged only in College of Education Peshawar, Institute of Education Hyderabad, and Institute of Education and Research Lahore. The total amounts of tuition fee in these three institutions were Rs.156,252, Rs.192,424 and Rs.162,098 during the years 1966-67, 1967-68 and 1968-69 respectively. The decrease in the income from tuition fee for the year 1968-69 as compared to that of 1967-68 was due to the decrease in the rate of the tuition fee at the Institute of Education and Research, Lahore during the year 1968-69.

The income from the other institution fees increased gradually during the years 1966-67, 1967-68 and 1968-69. Teachers' Training College, Karachi and Institute of Education, Hyderabad had comparatively lower income under this head than that of other institutions.

The Provincial Government of West Pakistan gave grants for salaries, equipment, establishment and scholarships during the fiscal years 1966-67, 1967-68 and 1968-69. These government grants were the biggest source of income for the Teachers' Training Institutions and income from these grants had been about 75 per cent of the total income

of all the institutions during the fiscal years 1966-67, 1967-68 and 1968-69. These grants were found to be on gradual increase during these three years. Grants for the construction purpose were received only by two institutions during these three years. Training College Suddar received one lakh rupees for construction in the year 1967-68. Teachers' Training College, Karachi received Rs.1,667,000 for the institution building during the years 1966-67, 1967-68 and 1968-69.

The Institute of Education and Research, Lahore received Rs.436,500 in 1968-69 from the Central Government of Pakistan for a special project and expected to receive an additional grant of Rs.165,000 during the fiscal year 1969-70.

A budget of Rs.3,254,373 was approved for all the Teachers' Training Institutions for the year 1969-70.

To sum up, the sources of income for the Teachers' Training Institutions were investments, endowments, fees and government grants. Of these sources, grant from the Provincial Government of West Pakistan was the main source of income during the fiscal years 1966-67, 1967-68 and 1968-69.

Enrolments

Twenty-sixth item of the questionnaire was framed with the purpose of collecting data about the enrolment in the Teachers' Training Institutions during the years 1966-67, 1967-68 and 1968-69. These data have been presented in Table XI.

TABLE XI

NUMBER OF STUDENTS IN THE TEACHERS' TRAINING INSTITUTIONS IN THE YEARS
1966-67, 1967-68 AND 1968-69

Institution	1966-67			1967-68			1968-69		
	Enrolled :	Comp- leted :	Passed :	Enrolled :	Comp- leted :	Passed :	Enrolled :	Comp- leted :	
T. T. C. Lahore (Female)	299	299	267	307	307	292	338	388	
C. T. C. Lahore	360	348	344	360	340	280	360	319	
T. T. C. Lyallpur	303	303	298	303	303	297	303	302	
T. T. C. Multan	240	239	224	240	233	229	240	231	
T. T. C. Sukkur	76	76	56	133	133	102	150	150	
College of Education, Peshawar	188	185	170	172	170	134	156	154	
	10	9	9	10	9	9	11	9	
Institute of Education, Hyderabad	160	156	124	202	198	132	256	241	
	7	2	12	13	8	3	27	27	
	30	25	20	58	49	22	60	50	
T. T. C. Karachi	292	279	239	330	312	282	366	340	
	29	-	-	39	28	25	-	39	
I. E. R. Lahore	384	178	178	450	293	293	532	370	
Total	2378	2099	1931	2617	2383	2100	2799	2570	

"n" means not reported by the institution.

Table XI shows that the total enrolment in these institutions was 2,378 in the year 1966-67, 2,617 in 1967-68 and 2,799 in the year 1968-69. Thus the rate of increase of enrolment during the year 1967-68 was about 10 per cent over the enrolment of the year 1966-67 and was about 7 per cent in 1968-69 over the enrolment in the year 1967-68.

Institute of Education and Research, Lahore reported one figure for the total enrolment in different programmes in the institute, while the Teachers' Training Institutions at Hyderabad, Karachi and Peshawar gave separate figures for the Bachelor of Education and Master of Education Degree Programmes. For the projections the total enrolment of the Teacher Training Programmes at one particular time of year was taken. Thus in the case of two year Master's Degree Programme the total enrolment of a year was the sum of the first year, and second year students at the time of enrolment. The information about the number of the students passed in 1968-69 was not reported by the institutions as the results had not been declared when the writer visited these institutions in November, 1969.

Expenditure

This section consisting of items twenty-seven to thirty of the questionnaire aimed at collecting information about the total recurring and capital expenditures of the Teachers' Training Institutions in the fiscal years 1966-67, 1967-68 and 1968-69. The recurring expenditure on salaries of the teaching staff, non-teaching staff and administrators and the expenditures on establishment, allowances, auxiliary facilities and

instructional materials were not available under separate heads in all the Teachers' Training Institutions. Institutions at Hyderabad and Peshawar did not maintain separate heads for these items. Hence total recurring expenditures have been presented institution-wise in Table XII.

TABLE XII

RECURRING EXPENDITURE OF THE TEACHERS' TRAINING INSTITUTIONS
DURING THE FISCAL YEARS 1966-67, 1967-68 AND 1968-69

Institution	EXPENDITURE IN THE YEAR		
	1966-67	1967-68	1968-69
T. T. C. Lahore (Female)	278145	290981	273665
C. T. C. Lahore	432064	414828	424203
T. T. C. Lyallpur	127841	145936	133899
T. T. C. Multan	210288	220870	227293
T. T. C. Sukkur	110531	136400	175436
College of Education, Peshawar	185689	167961	204526
Institute of Education, Hyderabad	272813	295370	345281
T. T. C. Karachi	180165	164305	205540
I. E. R. Lahore	798224	982741	940554
Total	2595780	2819392	2930397

Table XII shows that there was a gradual increase in the recurring expenditure of the Teachers' Training Institutions during the years 1966-67, 1967-68 and 1968-69. It can be seen from the table that about one-third of the total expenditure of all the Teachers' Training

Institutions during these three fiscal years was spent for the Institute of Education and Research, Lahore and the other eight institutions spent only the remaining two-thirds of total recurring expenditure for all the institutions during these three fiscal years.

Capital expenditure as defined in Chapter I consisted of cost on durable properties and assets. The information about the cost of furniture and equipment have been presented in Table XIII.

TABLE XIII
INSTITUTION-WISE COST OF FURNITURE AND EQUIPMENT IN THE
YEARS 1966-67, 1967-68 AND 1968-69

Institution	(in rupees)		
	EXPENDITURE IN THE YEAR		
	1966-67	1967-68	1968-69
T. T. C. Lahore (Female)	-	-	500
C. T. C. Lahore	2500	500	500
T. T. C. Lyallpur	-	500	-
T. T. C. Multan	1000	499	500
T. T. C. Sukkur	2000	2134	2900
College of Education, Peshawar	-	-	-
Institute of Education, Hyderabad	-	-	-
T. T. C. Karachi	4567	-	-
I. E. R. Lahore	44707	47734	48000
Total	54774	51367	52400

"-" means that no expenditure was made.

Table XIII shows that an amount of Rs.54,774 was spent for furniture and equipment during the fiscal year 1966-67. This amount decreased during the fiscal years 1967-68 and 1968-69 to Rs.51,367 and Rs.52,400 respectively. During the fiscal years 1966-67, 1967-68 and 1968-69, the Institute of Education and Research, Lahore spent about 82 per cent, 93 per cent and 95 per cent respectively of the total expenditures under this head for all the Teachers' Training Institutions. Institutions at Hyderabad and Peshawar had no expenditure under this head during these three fiscal years.

As regards the cost of library books the data revealed that the Teachers' Training Institutions spent the following amounts on this item during the fiscal years 1966-67, 1967-68 and 1968-69.

<u>Year</u>	<u>Amount (in rupees)</u>
1966-67	23712
1967-68	27700
1968-69	27200

Institute of Education and Research, Lahore spent about 83 per cent of the total expenditure of all the institutions on library books during each of the fiscal years 1966-67 and 1968-69 and spent about 73 per cent of the total expenditure of all the institutions on books during the year 1967-68.

As regards the expenditure on purchase of land it was reported that no amount was spent by the institutions under this head during the fiscal years 1966-67, 1967-68 and 1968-69.

Regarding the cost on construction it was reported that Training College, Sukkur spent an amount of one lakh rupees for building quarters for teachers and mineal staff. Teachers' Training College, Karachi spent an amount of Rs.1,667,000 for construction during the years 1966-67, 1967-68 and 1968-69. Other Teachers' Training Institutions did not spend any amount under this head during these three years.

Process of financial help to the institutions

This section comprising of items thirty-one to thirty-nine of the questionnaire aimed at knowing as to how the Teachers' Training Institutions received financial aid.

The Teachers' Training Colleges gave estimates according to their needs for the expected expenditures to the government before the beginning of the fiscal year. The budget estimates were prepared in the light of the past expenditures and justification was given for any new expenditure proposed. These estimated budgets were approved by the government in total as far as the recurring expenditures were concerned. As regards the estimates for the non-recurring expenditures the government looked to their own resources. The government examined the needs of the institutions for the non-recurring expenditures and allocated the amounts for the developmental schemes as was desired suitable by the government. The Teachers' Training Colleges spent the approved budgets during the fiscal year and if some amount was saved that was surrendered to the government at the end of the fiscal year.

Institute of Education and Research, Lahore was not a university department but as an institute within the Punjab University, it had to submit the budget and get it approved through the university channel. College of Education, Peshawar and Institute of Education, Hyderabad were the university departments and the respective universities presented the budget estimates for the coming fiscal year to the government and got them approved.

Some times the Teachers' Training Institutions had to revise their sanctioned budgets, because of the transfers of the teachers, or increase in the salaries of the teachers. The revised budgets were presented to the government and the justification for the revisions was also given. Thus these institutions received the grants to meet the increased expenditures.

Another aspect of the process was that some grants were fixed for the institutions. The amounts of scholarships were fixed for the Teachers' Training Colleges and these fixed amounts were given to these Teachers' Training Colleges every year.

Financial problems and probable solutions

The last two items of the questionnaire aimed at getting information from the heads of the Teachers' Training Institutions about the problems in the process of receiving the financial aid from the government and the likely solutions to these problems. The problems as stated by the heads of the Teachers' Training Institutions have been given below:

1. The needs of the Teachers' Training Institutions were not determined, as far as the developmental expenditures were concerned.
2. The sanctions for certain financial demands depended, to some extent, upon the likes and dislikes of the officials concerned.
3. The procedure of getting the financial aids from the government was lengthy and cumbersome.
4. For the developmental budget there were many official channels before the final approval took place. This caused delay and waste of time.
5. Some amounts for the purchase of library books and scientific equipment were sanctioned at the end of the fiscal year. The heads of the institutions were in difficulty in spending the money in a very short time at the end of the year. In such a hurry the amount was not likely to be spent wisely. If the amount was not spent within the fiscal year the heads of the Teachers' Training Institutions were labelled inefficient and they had to surrender the amounts saved.
6. The Finance Department distributed institution-wise the total developmental grants without involving educationists and heads of Teachers' Training Institutions.
7. The bills had to be drawn from the government treasuries, which in some cases were at considerable distance from a particular institution. The head of the institution considered it

inconvenient for him and waste of time to run to the treasury for drawing the money.

8. The amounts to be spent on buildings and maintenance were given to the Public Works Department for the completion of the work. This department was rather slow in completing the given work.

The heads of the institutions suggested the following solutions to the above mentioned problems:

1. The needs of Teachers' Training Institutions should be determined objectively before the grants for the developmental expenditures are given.
2. The demands of different Teachers' Training Institutions should be evaluated by educationists and final sanction of grants should be made on the basis of their recommendations.
3. The procedure of getting the financial aid should be made less time consuming by removing a few barriers between the institutions and the government department concerned.
4. The amounts for the purchase of library books and science materials should be sanctioned well ahead of the end of fiscal year.
5. The Finance Department should not have the power to fix priorities for the Education Department. It should rest with the educationists to fix the priorities for education within the department.

6. A lump grant for each Teachers' Training Institution should be provided in the budget and when the budget is approved it should be released in favour of the head of the institution, who should be fully responsible for the expenditure and the maintenance of accounts.
7. The head of the institution should be made responsible for the development of the institution, and he can perform the function well if he is given reasonable financial powers.
8. The amounts sanctioned for the institution should be released in favour of the head of the institution and he should be allowed to keep it in any bank for his convenience.
9. The amounts granted for the buildings and other non-recurring expenditures should not be given to Public Works Department, but should be released in favour of the head of institution, who can advertise for the tenders and get the work completed in less time as compared to the time taken by the Public Works Department.

Information pertaining to financial set up of the Teachers' Training Institutions have been presented and discussed in the foregoing section. The following section deals with cost projections for which besides separate set of data, a portion of the data regarding financial set up was also used.

II. PROJECTIONS

In this section enrolment projections for the secondary schools in West Pakistan and the enrolment and cost projections for the Teachers' Training Institutions included in the study have been presented and discussed.

Secondary school enrolment projections

The enrolment projections for Classes VI to X in West Pakistan were of two types: (1) enrolment trend projections and (2) projections for achieving universal education up to Class VIII by 1985.

School enrolment trend projections. To make these projections the actual enrolments for Classes VI to X in West Pakistan for the years 1948 to 1967 as shown in Table XIV were used as basic data.

(25, pp. 42, 51.) These data have been presented graphically in Figure 1. For the school enrolment trend projections the semi-logarithmic equation given at page 38 was used. As the data were found to be very close to the curve of goodness of fit based on semi-logarithmic relationship, it was felt unnecessary to test for the significance of departure from this relationship. Applying this equation enrolment trend projections for Classes VI to X were calculated¹ for the period 1969 to 1990 and have been presented in Table XV.

Table XV shows that enrolment in Classes VI to X in West Pakistan was likely to be 1,159,348 in 1970, whereas it was 279,000 in

¹The calculations were made with the help of "Computer Program I" (Appendix C) which was developed for this purpose.

TABLE XIV

ENROLMENTS IN CLASSES VI TO X IN WEST PAKISTAN FOR
THE YEARS 1948 TO 1967

Year	Classes VI-VIII	Classes IX-X	Classes VI-X
1948	221000	58000	279000
1949	225000	59000	284000
1950	250000	67000	317000
1951	276000	77000	353000
1952	288000	84000	372000
1953	281000	89000	370000
1954	300000	96000	396000
1955	332000	109000	441000
1956	368000	122000	490000
1957	383000	130000	513000
1958	399000	146000	545000
1959	398000	157000	555000
1960	422000	149000	571000
1961	449000	160000	609000
1962	461000	161000	622000
1963	491000	209000	700000
1964	576000	217000	793000
1965	624000	222000	846000
1966	689000	244000	933000
1967	763000	273000	1036000

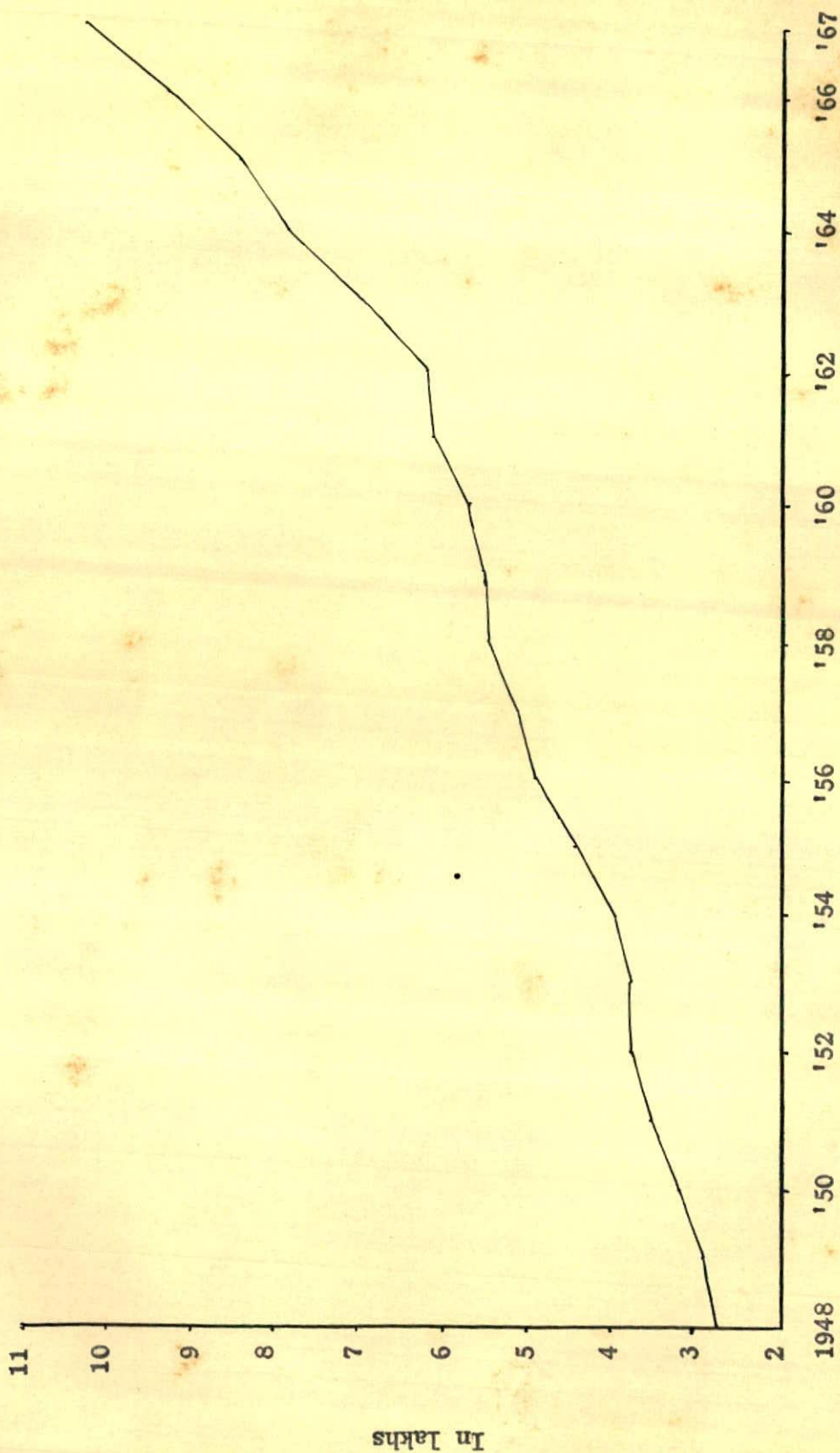


FIGURE 1

TOTAL ENROLMENTS IN CLASSES VI TO X IN WEST PAKISTAN IN THE YEARS 1948 TO 1967

TABLE XV

SCHOOL ENROLMENT TREND PROJECTIONS FOR CLASSES VI TO X IN
WEST PAKISTAN FOR THE YEARS 1969 TO 1990

Year	Enrolments
1969	1086134
1970	1159348
1971	1237497
1972	1320915
1973	1409955
1974	1504997
1975	1606446
1976	1714733
1977	1830320
1978	1953698
1979	2085393
1980	2225965
1981	2376013
1982	2536175
1983	2707133
1984	2889616
1985	3084399
1986	3292312
1987	3514240
1988	3751128
1989	4003984
1990	4273884

1948. These enrolment figures were likely to be 2,225,965 and 4,273,884 in the years 1980 and 1990 respectively. It can be seen from the table that the school enrolment in 1980 would be about double the school enrolment of 1970 under the same projections whereas the school enrolment in 1990 would be about four times the school enrolment of 1970 under the same projections.

Enrolment projections for achieving universal education up to Class VIII by 1985. According to the Perspective Plan the Government of Pakistan envisaged to extend universal education up to Class VIII by 1985. This would mean that all school age children of corresponding groups would be in Classes I to VIII by 1985. As the age for admission to school has been assumed as five plus, the school enrolment projections for achieving universal education aimed at bringing all the eleven, twelve and thirteen year age groups in Classes VI, VII and VIII respectively up to the year 1985. Karwanski's Population Projections were used for this purpose as these population projections presented population figures by each age separately. According to Karwanski's Population Projections following were likely to be the population figures of eleven, twelve and thirteen year age groups in 1985. (10, pp. 8-9.)

Year	Age group	Population figure
1970	11 year	2304000
1980	12 year	2248500
1990	13 year	2189800

Similarly Table XVII presents the fractions of the enrolments of Class IX for the years 1964 to 1967 joining Class X in the following years and .8323, an average of these fractions was used to calculate the enrolments in Class X during the projection period.

TABLE XVII
FRACTIONS OF THE CLASS IX ENROLMENTS JOINING CLASS X

Year	Enrolment in Class IX	Enrolment in Class X in the following year	Fraction
1964	133000	97000	.7293
1965	125000	108000	.8640
1966	136000	124000	.9118
1967	148000	122000	.8243

With the help of the above mentioned data the school enrolments for achieving universal education up to Class VIII by 1985 were calculated¹ and the projected enrolment figures have been presented in Table XVIII.

Table XVIII shows that a rapid increase was expected in the secondary school enrolments up to the year 1985 because of two factors. Firstly the enrolment ratio would increase from what was in 1968 to 100 per cent of school going population in 1985 and secondly the school enrolment would also increase due to population growth each year.

¹"Computer Program II" (Appendix C) was developed to make calculations for these projections.

TABLE XVIII

SCHOOL ENROLMENT PROJECTIONS FOR THE YEARS 1969 TO 1990 FOR
ACHIEVING UNIVERSAL EDUCATION UP TO CLASS VIII BY 1985

Year:	ENROLMENT IN CLASS					Total VI to X
	VI	VII	VIII	IX	X	
1969	426353	381676	337753	173201	127350	1446333
1970	543706	498353	453506	263509	144164	1903238
1971	661059	615029	569259	353818	219332	2418497
1972	778412	731706	685012	444126	294501	2933757
1973	895765	848382	800765	534434	369670	3449016
1974	1013118	965059	916518	624743	444838	3964276
1975	1130470	1081735	1032271	715052	520007	4479535
1976	1247823	1198412	1148024	805360	595175	4994794
1977	1365177	1315088	1263776	895669	670344	5510054
1978	1482529	1431765	1379529	985977	745513	6025313
1979	1599883	1548441	1495282	1076286	820681	6540573
1980	1717235	1665118	1611035	1166594	895850	7055832
1981	1834588	1781794	1726788	1256903	971018	7571091
1982	1951941	1898471	1842541	1347211	1046187	8086351
1983	2069294	2015147	1958294	1437520	1121355	8601610
1984	2186647	2131824	2074047	1527828	1196524	9116870
1985	2304000	2248500	2189800	1618137	1271692	9632129
1986	2359620	2302940	2243840	1708445	1346861	9961706
1987	2415240	2357380	2297880	1750606	1422030	10243136
1988	2470860	2411820	2351920	1792767	1457122	10484490
1989	2526480	2466260	2405960	1834928	1492216	10725844
1990	2582100	2520700	2460000	1877090	1527308	10967198

The rate of increase in school enrolments would be comparatively slower in the years from 1985 to 1990 because the increase in school enrolments would take place only due to the increase in population in those years. This rate of increase can be seen from Figure 2, where both the secondary school enrolment projections have been presented graphically.

Enrolment projections for Teachers' Training Institutions

To make enrolment projections for the Teachers' Training Institutions calculations for the total teacher requirement and the additional teacher requirement were made on the basis of two types of school enrolment projections mentioned earlier.

Total teacher requirement. This teacher requirement was calculated by dividing the projected school enrolment figures by the pupil-teacher ratio of 17:1¹ and the figures of the teacher requirement during the projection period have been presented in Table XIX. For these calculations the modified formula of the Asian Model given at page 41 was used.

Additional teacher requirement. The modified formula of the Asian Model given at page 42 was used to calculate the additional teacher requirement for the secondary schools of West Pakistan during the

¹The pupil-teacher ratio was calculated by dividing 1,071,000, the enrolment of Classes VI to X in West Pakistan in the year 1967-68 (25, pp. 47, 51.) by 62,000, the number of secondary school teachers in West Pakistan in the year 1967-68. (25, pp. 65, 71.)

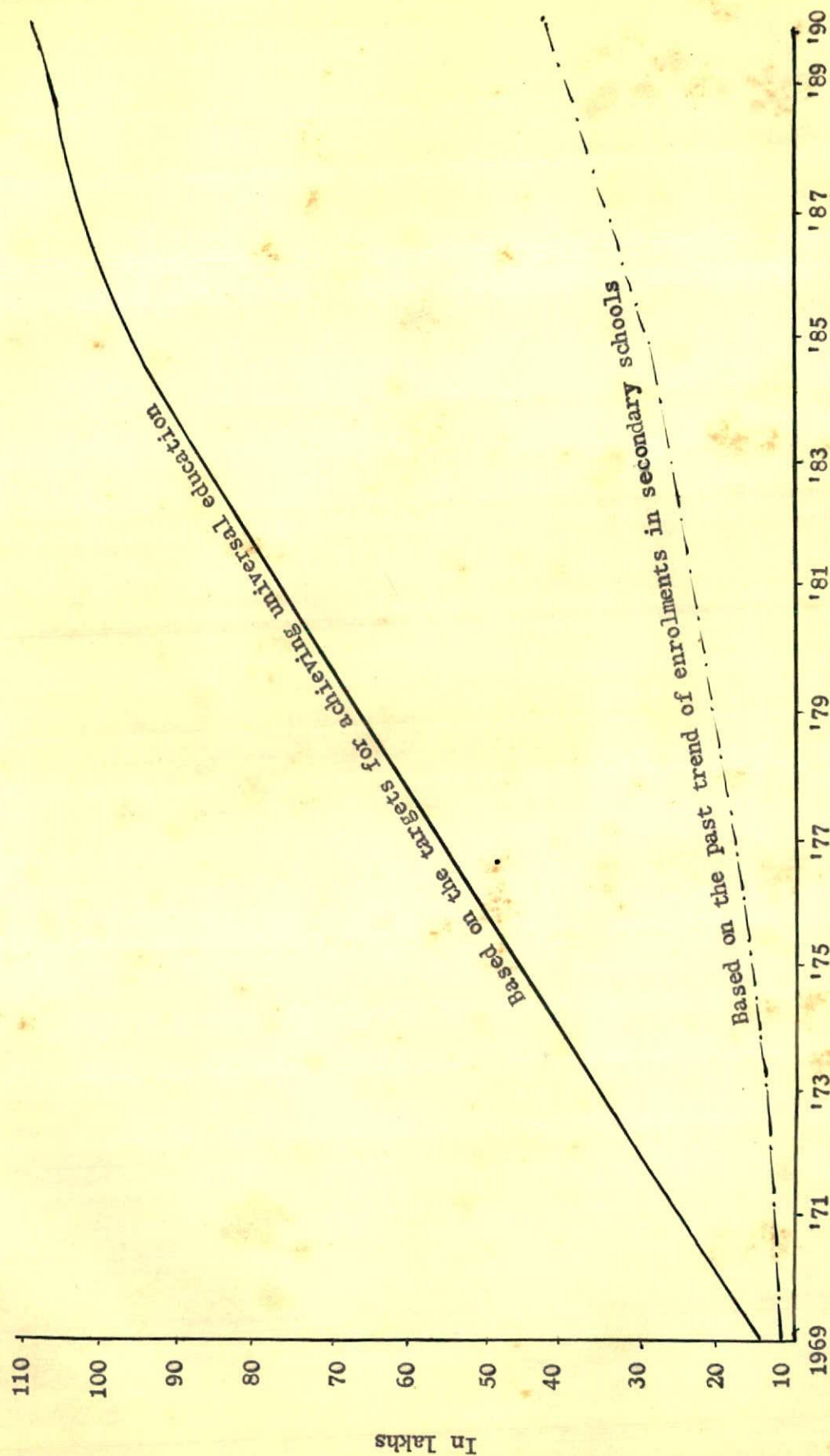


FIGURE 2

SECONDARY SCHOOL ENROLMENT PROJECTIONS FROM 1969 TO 1990

TABLE XIX

TEACHER REQUIREMENT FOR CLASSES VI TO X IN WEST PAKISTAN
FROM 1969 TO 1990

Year	TEACHER REQUIREMENT BASED ON	
	School enrolment trend	School enrolment projections
	projections	achieving universal education
1969	63890	85078
1970	68197	111955
1971	72794	142265
1972	77701	172574
1973	82939	202883
1974	88529	233193
1975	94497	263502
1976	100867	293811
1977	107666	324121
1978	114923	354430
1979	122670	384740
1980	130939	415049
1981	139765	445358
1982	149187	475668
1983	159243	505977
1984	169977	536286
1985	181435	566596
1986	193665	585983
1987	206720	602537
1988	220655	616735
1989	235528	630932
1990	251405	645129

projection period. An attrition rate¹ of .11, as calculated by Roy as a result of the survey of selected high schools in East Pakistan was used to calculate the additional teacher requirement for secondary schools in West Pakistan. (14, p. 142.) The figures for these additional teacher requirements have been presented in Table XX.

Enrolment projections for Teachers' Training Institutions. The modified formula of the Asian Model for projecting enrolments for Teachers' Training Institutions as may be seen at page 42 was used to make these projections. The data for these projections were calculated as given below.

The fractions of new secondary school teachers not coming from the Teachers' Training Institutions included in the study were calculated for the years 1965 to 1968 and .71, an average of these fractions was used for the projection purpose. These fractions and the pertinent data have been presented in Table XXI.

¹Karwanski used an attrition rate of .094 for the first level of education running from Classes I to VIII and used an attrition rate of .13 for second level of education running from Classes IX to XII in Pakistan. (11, pp. 47-48.) As Roy's attrition rate was very close to it, hence it was decided to use .11 attrition rate for secondary school teachers in West Pakistan.

TABLE XX

**ADDITIONAL TEACHER REQUIREMENT FOR CLASSES VI TO X IN WEST
PAKISTAN FROM 1969 TO 1990**

Year	ADDITIONAL TEACHER REQUIREMENT BASED ON	
	School enrolment trend projections	School enrolment projections for achieving universal education
1969	10619	29008
1970	11335	36235
1971	12099	42624
1972	12914	45958
1973	13765	49293
1974	14714	52627
1975	15706	55961
1976	16764	59295
1977	17895	62629
1978	19101	65963
1979	20388	69297
1980	21763	72631
1981	23230	75965
1982	24796	79299
1983	26467	82633
1984	28251	85967
1985	30155	89301
1986	32188	91712
1987	34358	94103
1988	36674	96476
1989	39146	98838
1990	41785	101200

TABLE XXI

FRACTIONS OF THE NEW TEACHERS IN SECONDARY SCHOOLS NOT COMING DIRECTLY FROM THE TEACHERS' TRAINING INSTITUTIONS IN THE YEARS 1965 TO 1968

Year	Total no. of new teachers in sec. schools	No. of new teachers with B.Ed., M.Ed. and M.A.Edu. degrees in sec. schools	No. of new teachers not graduates in sec. schools	New teachers not graduates as a fraction of total new teachers in sec. schools
1965	5200	1330	3870	.74
1966	1700	636	1064	.63
1967	5300	1811	3489	.66
1968	5200	998	4202	.81

The fractions of trained graduate teachers not joining the profession during the years 1965 to 1968 were calculated assuming that new graduate trained teachers in secondary schools in a particular year came from the output of Teachers' Training Institutions in the previous year. An average of these fractions coming to .39 was used in making projections. These fractions and the pertinent data have been presented in Table XXII.

TABLE XXII

FRACTIONS OF TRAINED GRADUATE TEACHERS NOT JOINING PROFESSION

Year	Output of the Teachers' Training Institutions	Increase in trained graduate teachers in secondary schools in the following year	Trained graduate teachers not joining profession	Fraction of trained graduate teachers not joining profession
1964	1592	1330	262	.16
1965	2296	636	1660	.72
1966	1986	1811	175	.09
1967	2432	998	1434	.59

The fraction of the enrolment of the Teachers' Training Institutions in the year 1967-68 completing the programme successfully was calculated from the following data:

<u>Item</u>	<u>Figure</u>
Enrolment of Teachers' Training Institutions	
in 1967-68	2617
Number of the trainees completing successfully	
from this enrolment	2100
Output as a fraction of the enrolment	.80

With the help of the above mentioned fractions the calculations¹ for the enrolment projections of the Teachers' Training Institutions based on the two types of secondary school enrolment projections were made and have been presented in Table XXIII.

Table XXIII shows that the enrolments of the Teachers' Training Institutions, included in the study would be 24,831 in 1989 if the secondary school enrolment increased according to the past trend. This number was about nine times 2,799 the actual enrolment of these Teachers' Training Institutions in 1968-69. (Table XI) The enrolment of the Teachers' Training Institutions was expected to be 53,068 in 1984 if the universal education up to Class VIII was to be achieved by 1985. It means that, under these projections, there would be a need to raise the

¹For these calculations "Computer Programs SUBB and SUBC" (12, pp. 149-151.) were used.

TABLE XXIII

ENROLMENT PROJECTIONS FOR TEACHERS' TRAINING INSTITUTIONS
BASED ON SCHOOL ENROLMENT PROJECTIONS FOR
THE YEARS 1969 TO 1989

Year	PROJECTIONS BASED ON SCHOOL ENROLMENT	
	Trend projections	Projections achieving universal education
1969	6736	21533
1970	7190	25330
1971	7674	27311
1972	8192	29293
1973	8744	31274
1974	9333	33255
1975	9963	35237
1976	10634	37218
1977	11351	39199
1978	12116	41180
1979	12933	43162
1980	13805	45143
1981	14735	47124
1982	15728	49106
1983	16789	51087
1984	17920	53068
1985	19128	48559
1986	20418	48143
1987	21794	47824
1988	23263	48752
1989	24831	49680

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enrolment of the Teachers' Training Institutions about nineteen times as compared to the actual enrolment of these Teachers' Training Institutions in 1968-69. A gradual increase in the enrolments of the Teachers' Training Institutions was expected up to 1984 under the school enrolment projections for achieving universal education but a sudden decrease was observed in the years 1985, 1986 and 1987. This decrease was due to the decrease in the school enrolments during these years and the reason for the decrease of school enrolment in these years has been explained at page 84.

A third type of enrolment projection for the Teachers' Training Institutions was made on the basis of the past trend of the enrolments of these Teachers' Training Institutions. For this purpose the year-wise number of the trained graduate teachers in West Pakistan for the years 1960 to 1967 were taken as basic data (25, pp. 148-49.) to determine the past trend of enrolment of the Teachers' Training Institutions. These data have been presented in Table XXIV and shown graphically in Figure 3.

For this projection the equation given at page 40 was used. As an eye examination of the data indicated a close linear relationship between the two variables, test for the significance of departure from linearity was not used.

As the number of graduate teachers trained in West Pakistan in the year 1967 was 2,432 (Table XXIV) and the enrolment of the Teachers' Training Institutions in 1967 was 2,378 (Table XI), the figures projected on the basis of the past trend of total number of

TABLE XXIV
TOTAL NUMBER OF GRADUATE TEACHERS TRAINED IN WEST
PAKISTAN IN THE YEARS 1960 TO 1967

Year	Number of trained graduate teachers
1960	714
1961	763
1962	1287
1963	1180
1964	1592
1965	2296
1966	1986
1967	2432

trained graduate teachers in West Pakistan were multiplied by the fraction $2378/2432$ to obtain the enrolment figures for the Teachers' Training Institutions during the projection period. These enrolment figures have been presented in Table XXV.

Table XXV shows that 7,903 would be the enrolment of the Teachers' Training Institutions in the year 1969 if the past trend of the enrolment in these Teachers' Training Institutions continued. This number was about three times 2,799, the actual enrolment of these Teachers' Training Institutions in 1969.

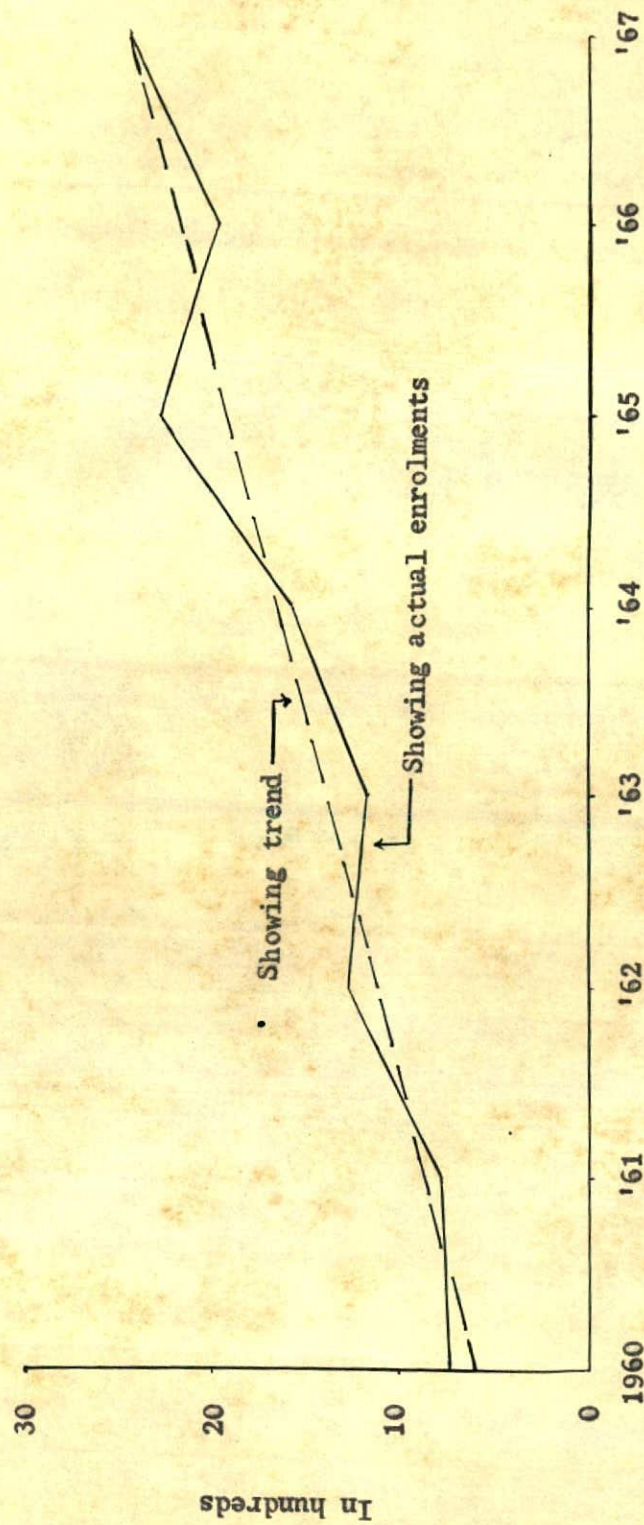


FIGURE 3

TOTAL NUMBER OF GRADUATE TEACHERS TRAINED IN THE YEARS 1960 TO 1967

TABLE XXV

ENROLMENT TREND PROJECTIONS OF TEACHERS' TRAINING INSTITUTIONS
FOR THE YEARS 1969 TO 1989

Year	Projected number
1969	2879
1970	3130
1971	3381
1972	3632
1973	3884
1974	4135
1975	4386
1976	4637
1977	4888
1978	5140
1979	5391
1980	5642
1981	5893
1982	6144
1983	6396
1984	6647
1985	6898
1986	7149
1987	7400
1988	7652
1989	7903

The three types of enrolment projections for the Teachers' Training Institutions shown graphically in Figure 4 were compared. It was found that if the Teachers' Training Institutions continued to training teachers according to their past trend, the products of these institutions would be insufficient in number to meet the demand of school enrolment increasing under their own past trend. If the past trend of increase in the school enrolment continued, 24,831 trained graduate teachers would be needed in 1989. This number of the teachers was about three times 7,903, the enrolment of the Teachers' Training Institutions in the same year under the enrolment trend projections of the Teachers' Training Institutions. Similarly if universal education up to Class VIII was to be achieved by 1985, the enrolment in the Teachers' Training Institutions in 1989 was expected to be 49,680, which was about six times 7,903, the enrolment of the Teachers' Training Institutions in 1989 under the enrolment trend projections of these institutions.

A comparison of the enrolment figures of 1984 in the three enrolment projections for the Teachers' Training Institutions revealed even a greater difference. The enrolment of these institutions was expected to be 17,920 in 1984 to meet the needs of the school enrolments increasing according to their past trend. This enrolment of the Teachers' Training Institutions was about three times 6,647, the enrolment of these institutions in 1984 under the enrolment trend projections of these institutions. Similarly the enrolment of the

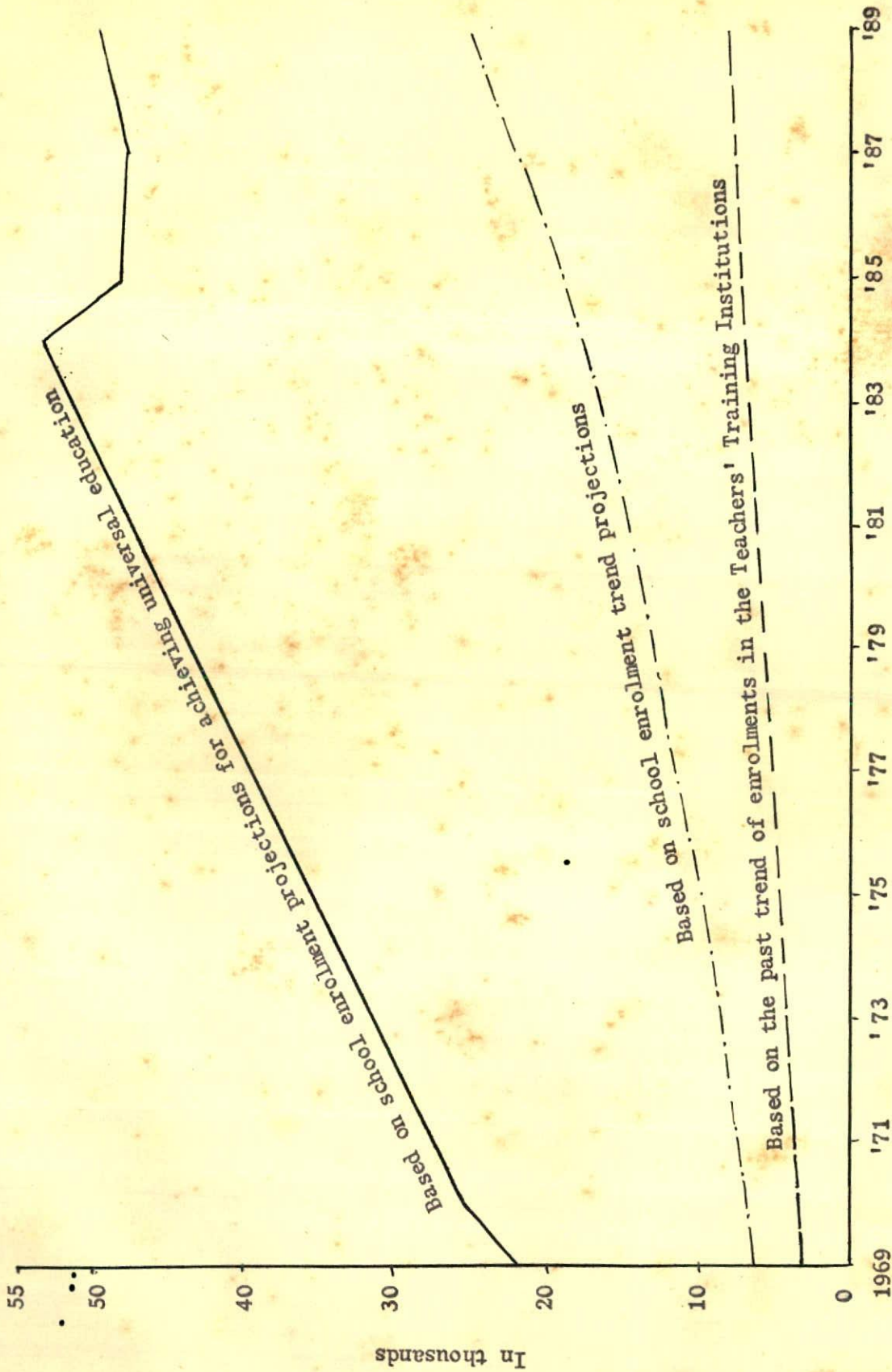


FIGURE 4

ENROLMENT PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS FROM 1969 TO 1989

Teachers' Training Institutions was expected to be 53,068 in 1984, if the universal education up to Class VIII was to be achieved by 1985. This enrolment figure was more than eight times 6,647, the enrolment of the Teachers' Training Institutions for the year 1984 under the enrolment trend projections of these institutions. This difference appeared because more teachers were needed if the universal education up to Class VIII was to be achieved by 1985.

Cost projections for Teachers' Training Institutions

The enrolment projections for Teachers' Training Institutions were used to project cost for these institutions. The recurring and capital costs were projected separately.

Recurring cost projections. As regards the recurring cost projections, the per-pupil recurring costs for the Teachers' Training Institutions during the years 1966-67, 1967-68 and 1968-69 were calculated and the pertinent data have been presented in Table XXVI.

TABLE XXVI

PER-PUPIL RECURRING COSTS

Year	Recurring cost (in rupees)	Enrolment	Per-pupil cost (in rupees)
1966-67	2595780	2378	1091.58
1967-68	2819392	2617	1077.34
1968-69	2930397	2799	1046.94

An average of the three per-pupil recurring costs mentioned in Table XXVI came to Rs.1,071.95, which was used to make recurring cost projections for the Teachers' Training Institutions. An annual inflation rate of 2.5 per cent as used in various studies (12, p. 91 : 15, p. 34 : 16, p. 22.) was used in projecting recurring costs for the period 1969 to 1988 with 1968 as the base year. The modified formula of the Asian Model presented at page 45 was used to calculate¹ the recurring cost projections which have been presented in Table XXVII and shown graphically in Figure 5.

Table XXVII shows that if the enrolment of the Teachers' Training Institutions increased according to the past trend of enrolment of these institutions, the recurring expenditure in 1988, would be Rs.13,440,000, which was more than four times the actual recurring expenditure in 1969. If the secondary school enrolment increased according to their past trend of enrolments the recurring cost for training the graduate teachers to meet the demand of these school enrolments in 1988 would be Rs.40,861,000, which was more than three times the recurring cost for the same year under the enrolment trend projections in the Teachers' Training Institutions and was about fourteen times the actual recurring expenditure of these Teachers' Training Institutions in 1969. Similarly if universal education up to Class VIII was to be achieved by 1985, the recurring expenditure for the Teachers'

¹For these calculations "Computer Program SUBE" (16, p. 152-56.) was used.

TABLE XXVII

RECURRING COST PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS
FOR THE YEARS 1969 TO 1988

(in lakhs rupees)

Year	PROJECTIONS BASED ON		
	Enrolment trend	School	School enrolment
	projections of	enrolment	projections
	Teachers' Training Institutions	trend : projections	achieving universal education
1969	31.63	74.00	236.59
1970	35.25	80.97	285.27
1971	39.03	88.59	315.27
1972	42.98	96.92	346.60
1973	47.10	106.04	379.29
1974	51.40	116.02	413.40
1975	55.88	126.94	448.98
1976	60.36	138.88	486.08
1977	65.44	151.95	524.76
1978	70.52	166.25	565.07
1979	75.82	181.89	607.06
1980	81.33	199.01	650.80
1981	87.08	217.73	696.35
1982	93.06	238.22	743.77
1983	99.29	260.64	793.12
1984	105.77	285.16	844.48
1985	112.51	311.99	792.03
1986	119.52	341.35	804.88
1987	126.81	373.47	819.54
1988	134.40	408.61	856.33

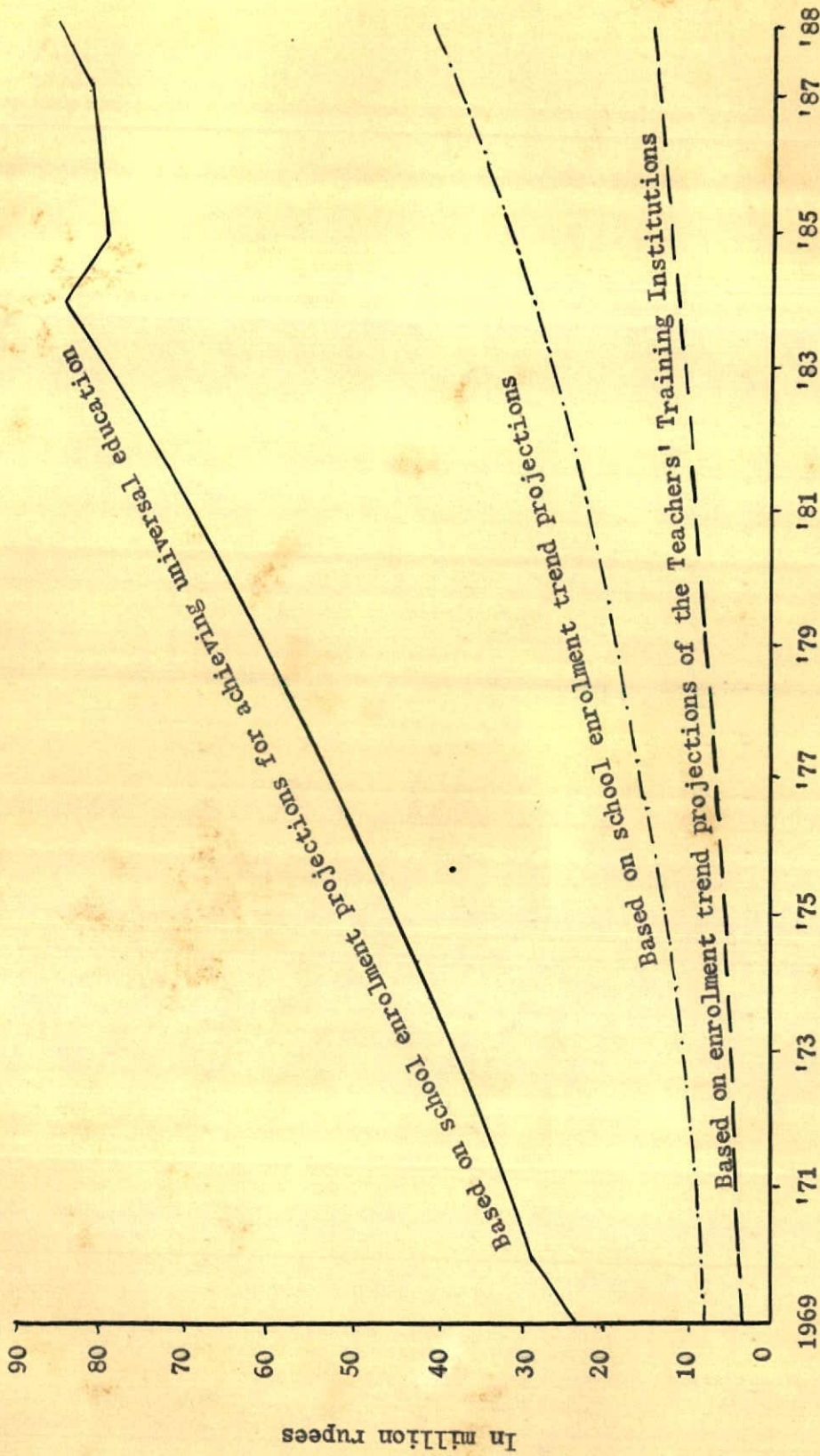


FIGURE 5

RECURRING COST PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS FROM 1969 TO 1988

Training Institutions would be Rs.85,633,000 in 1988. This cost figure was more than double the cost under the school enrolment trend projections and was more than six times the recurring cost in the same year under enrolment trend projections of the Teachers' Training Institutions. The projection figures showed that if universal education up to Class VIII was to be achieved by 1985 the recurring cost for Teacher Training Programmes in 1984 would increase about twenty-seven times the actual recurring expenditure for the Teacher Training Programmes in 1969.

Another peculiarity to be noted in the case of universal education projection was the gradual increase of the recurring costs for Teacher Training Programmes from 1969 to 1984 and a sudden decrease of recurring cost in the year 1985. This can also be seen from the Figure 5. The reason was that more teachers were required to be trained for achieving universal education up to Class VIII by 1985. Once 100 per cent of eleven, twelve and thirteen year age groups were brought to Classes VI, VII and VIII respectively and the teacher requirement was fulfilled, the teacher need would decrease for a few years after 1984 as compared to the need of teachers in the year 1984. As a result the cost for training teachers would also be decreased after 1984.

Additional pupil-place requirement. For calculating the capital costs for the Teachers' Training Institutions, there was a need to know the pupil-places needed for these institutions each year.

The pupil-places referred to the additional facilities in terms of pupil-places to be provided in any year for meeting the increasing enrolments in the next year and for replacing that portion of the existing pupil-places which would be obsolete. Roy used 5 per cent as a rate for replacing the pupil-places due to obsolescence. (15, p. 35.) But he was of the opinion that this obsolescence rate was higher than what actually was. Hence it was decided to use 3 per cent as a replacement rate due to obsolescence. Although some of these Teachers' Training Institutions could absorb some more students (teacher-trainees) without providing for the additional pupil-places but some institutions, like the Teachers' Training Colleges at Lahore and Institute of Education, Hyderabad were already over-crowded and needed extension in buildings. Hence the capacity of absorbing more students without providing the additional pupil-places was assumed to be negligible in the case of all the Teachers' Training Institutions.

The formula given at page 48 was used to calculate¹ the additional pupil-places needed to be completed each year for Teachers' Training Institutions in the projection period. These pupil-places have been presented in Table XXVIII and shown graphically in Figure 6.

Table XXVIII shows three different sets of the pupil-places. It can be seen from the table that there would be a gradual increase

¹"Computer Program SUBE" (16, pp. 152-56.) was used to calculate the pupil-places needed to be completed each year during the projection period. The Computer results shown in Table XXVIII were rounded.

TABLE XXVIII

ADDITIONAL PUPIL PLACES NEEDED EACH YEAR FOR THE TEACHERS' TRAINING INSTITUTIONS FOR THE YEARS 1969 TO 1988

Year	PUPIL PLACES ON THE BASIS OF		
	Enrolment trend	School	School enrolment
	projections of	enrolment	projections
	Teachers' Training Institutions	trend : projections	achieving universal education
1969	338	656	4443
1970	345	700	2741
1971	353	748	2801
1972	360	798	2860
1973	368	852	2920
1974	375	909	2979
1975	383	970	3038
1976	390	1036	3098
1977	398	1106	3157
1978	405	1180	3217
1979	413	1260	3276
1980	420	1345	3336
1981	428	1435	3395
1982	436	1532	3454
1983	443	1635	3514
1984	451	1746	-2917
1985	458	1863	1041
1986	466	1989	1126
1987	473	2123	2363
1988	481	2266	2391

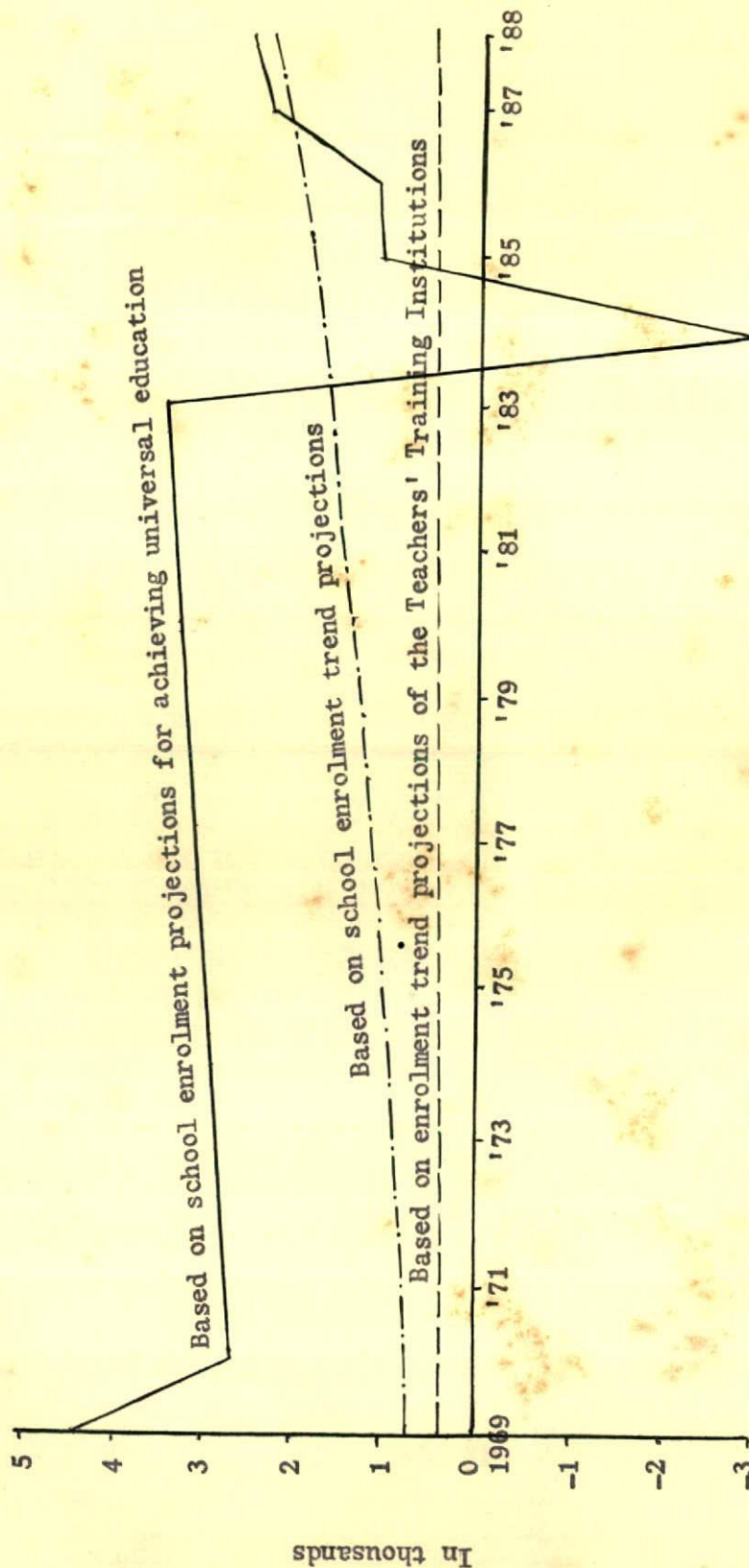


FIGURE 6

ADDITIONAL PUPIL-PLACES REQUIRED FOR THE TEACHERS' TRAINING INSTITUTIONS FROM 1969 TO 1988

in the provision of additional pupil-places if the enrolment of the Teachers' Training Institutions increased according to their own past trend or if the enrolments of the Teachers' Training Institutions were increased to meet the needs of school enrolments increasing according to their past trend. The increase of the additional pupil-places would not be regular if the enrolments of the Teachers' Training Institutions were to be increased to meet the needs of the school enrolments increasing under the policy of achieving universal education up to Class VIII by 1985. Under these projections, 4,443 additional pupil-places would be required in 1969, whereas 2,741 additional pupil-places would be needed in 1970. This difference was due to the difference in the school enrolments for achieving universal education in these years. There was a gradual increase in the requirement of the additional pupil-places from the years 1970 to 1983, but a negative figure appeared in 1984. The reason for this decrease was that the pupil-places in these institutions in 1984 were to be provided for the teachers to be trained in 1985, who would go to the schools in 1986, when school enrolments would be less as compared to the school enrolment in 1985, as already discussed in the school enrolment projections for achieving universal education up to Class VIII by 1985. The figures for these additional pupil-places were used to calculate the capital cost for the Teachers' Training Institutions.

Capital cost projections. Capital costs as defined in Chapter I consisted of costs on land, construction, furniture, equipment and

library books. The per-pupil-place capital costs for these categories were calculated to project capital cost for the Teachers' Training Institutions and have been described below.

The per-pupil-place cost of the land area could be calculated by dividing total approximate cost of land of the Teachers' Training Institutions by the enrolment of these institutions. But it was decided not to use the land cost in the projections because the land for the Teachers' Training Institutions included in the study was donated and it was expected that the land would be received free of cost if new Teachers' Training Institutions were established.

The per-pupil-place cost of construction could be calculated by dividing total amount spent on the construction of the Teachers' Training Institutions by the enrolment of these institutions in a particular year. But the actual construction costs of only six Teachers' Training Institutions were available as can be seen from Table VII. It was decided that the cost for building Teachers' Training College, Karachi would be used for calculating the per-pupil-place cost of construction. The reasons for this decision were as follows:

1. The building of this college was constructed during the years 1967 to 1969. Thus it was the latest construction at the time of making projections and represented the construction cost more closely as compared to the cost of the institutions constructed comparatively earlier.

2. The cost of construction of Teachers' Training College, Karachi was assumed to be representative and normal. If new institutions were constructed the cost would be close to the cost of this institution. Of all the Teachers' Training Institutions, the Institute of Education and Research, Lahore was the most costly in respect of buildings. This was a special type of institution by itself and such institutions were not likely to be established normally within the available sources. Therefore the mean of the cost of all institutions including Institute of Education and Research, Lahore was not used for projection purposes.

As a result of this decision the amount of Rs.1,667,000, the construction cost of Teachers' Training College, Karachi was divided by 366, the enrolment of this college in 1968-69 and the per-pupil-place cost of construction was calculated to be Rs.4,554.64, which was used for the projection purpose.

The per-pupil-place cost of library books was calculated by dividing the cost of library books in one year by the increase in enrolment in the following year, because it was expected that the new expenditure on books in a year was made mainly for the increase in the enrolment in the following year. The per-pupil-place costs for library books for the years 1966-67 and 1967-68 and the pertinent data have been presented in Table XXIX.

TABLE XXIX

PER-PUPIL-PLACE COST OF LIBRARY BOOKS

Year	Cost of library books	Increase of enrolment in the following year	Per-pupil-place cost
1966-67	23712	239	99.21
1967-68	27700	182	152.20

An average of the above mentioned two per-pupil-place costs of library books shown in Table XXIX coming to Rs.125.71 was used for the capital cost projections.

The per-pupil-place cost for furniture and equipment was calculated by dividing the cost of furniture and equipment during the years 1966-67 and 1967-68 by the increase in enrolments in the years 1967-68 and 1968-69 over the enrolments of the years 1966-67 and 1967-68 respectively. The reason for these calculations was the same as described earlier in calculating the per-pupil-place cost of library books. The per-pupil-place cost of furniture and equipment and the pertinent data have been presented in Table XXX.

TABLE XXX

PER-PUPIL-PLACE COST OF FURNITURE AND EQUIPMENT

Year	Cost of furniture and equipment	Increase of enrolment in the following year	Per-pupil-place cost
1966-67	54774	239	229.18
1967-68	51367	182	282.24

An average of the two per-pupil-place costs of furniture and equipment shown in Table XXX was Rs.255.71, which was used for the projection purpose.

To sum up, the following per-pupil-place costs were used for projecting capital costs for the Teachers' Training Institutions.

<u>Item</u>	<u>Per-pupil-place capital cost</u>
Construction	4554.64
Library books	125.71
Furniture and equipment	255.71

The sum of these three per-pupil-place capital costs, coming to Rs.4,936.06 was used as the total per-pupil-place capital cost for projecting the capital costs. An inflation rate of 2.5 per cent as explained at page 50 was used in the capital cost projections for the years 1969 to 1988 with 1968 as the base year. The modified formula of the Asian Model given at page 49 was used to calculate¹ the capital costs for the Teachers' Training Institutions. These projections have been presented in Table XXXI and shown graphically in Figure 7.

Following three types of capital cost projections for the Teachers' Training Institutions can be seen from the Table XXXI.

1. Cost projections calculated from the enrolment trend projections of the Teachers' Training Institutions.

¹In making calculations for the cost projections "Computer Program SUBE" (16, pp. 152-56.) was used.

TABLE XXXI

CAPITAL COST PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS
FOR THE YEARS 1969 TO 1988

Year	(in lakhs rupees)		
	PROJECTIONS BASED ON		
	Enrolment trend	School enrolment	School enrolment
	projections of Teachers' Training Institutions	trend projections	projections achieving universal education
1969	17.07	33.19	224.78
1970	17.89	36.31	142.15
1971	18.74	39.73	148.86
1972	19.62	43.47	155.83
1973	20.53	47.56	163.04
1974	21.48	52.04	170.52
1975	22.45	56.93	178.27
1976	23.47	62.29	186.30
1977	24.52	68.15	194.62
1978	25.61	74.57	203.24
1979	26.74	81.58	212.18
1980	27.91	89.26	221.43
1981	29.12	97.66	231.01
1982	30.37	106.85	240.93
1983	31.67	116.90	251.20
1984	33.01	127.90	-213.78
1985	34.41	139.94	78.18
1986	35.85	153.11	86.65
1987	37.34	167.51	186.44
1988	38.88	183.28	193.36

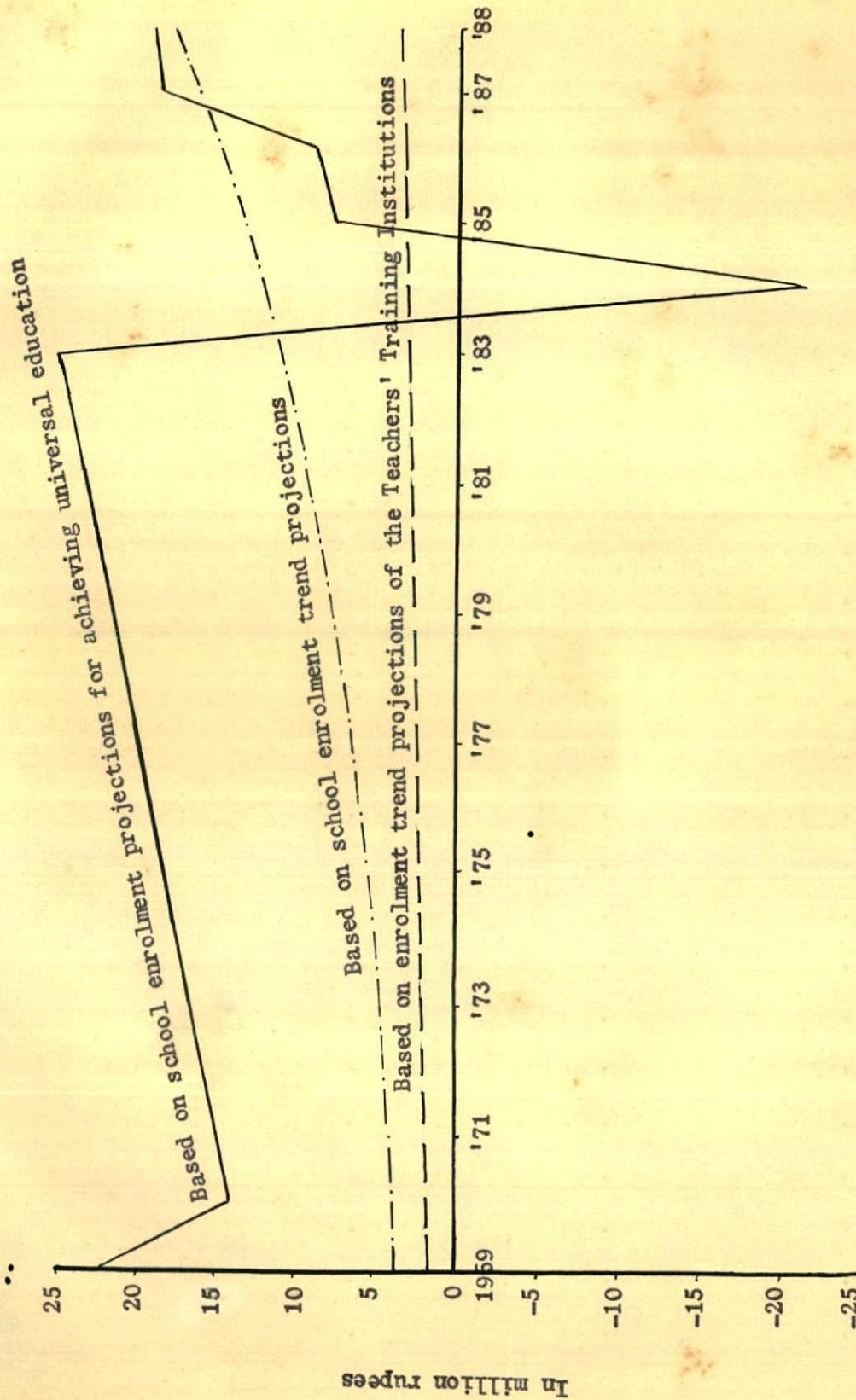


FIGURE 7

CAPITAL COST PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS FROM 1969 TO 1988

2. Cost projections calculated from enrolment projections of the Teachers' Training Institutions based on school enrolment trend projections.
3. Cost projections calculated from enrolment projections of the Teachers' Training Institutions based on school enrolment projections for achieving universal education up to Class VIII by 1985.

Table XXXI shows that if the past trend of the enrolment in the Teachers' Training Institutions continued, the capital cost in 1988 would be Rs.3,888,000, which was more than double the amount of Rs.1,707,000, the capital cost in 1969 under the same projections. The cost figures for the intermediate years showed a gradual increase. The cost projections of the Teachers' Training Institutions based on school enrolment trend projections also showed a gradual increase during the projection period. Under these projections it was expected that the capital costs for the Teacher Training Programmes would be Rs.3,319,000, Rs.8,158,000 and Rs.18,328,000 in the years 1969, 1979 and 1988 respectively. Thus the capital cost in 1988 was expected to be about six times the capital cost for 1969 under the same projection. It was also noted that in 1988 the capital cost of the Teachers' Training Institutions based on school enrolment trend projections would be about five times the capital cost of the Teachers' Training Institutions under their own enrolment trend projections.

The third type of capital cost projections calculated from the enrolment projections of the Teachers' Training Institutions based on school enrolment projections for achieving universal education up to Class VIII by 1985 did not show a regular increase in the capital cost during the projection period. Under these projections the capital cost in the year 1969 was expected to be Rs.22,478,000 whereas the capital cost in 1970 was expected to be Rs.14,215,000. The reason was that more additional pupil-places were required for the Teacher Training Programmes in the year 1969 under these projections. The capital cost showed a gradual increase from the year 1970 onwards and was expected to be Rs.25,120,000 in 1983. The figure of 1984 was negative because the pupil-places tended to decrease under these projections in 1984 as already explained at page 108. The capital costs again showed a gradual increase from the year 1985 to 1988 but the costs in these years were less than that of the year 1983 because of the achievement of universal education and because in these years the teachers would be trained only for the increase in the school enrolment due to the increase in population.

The costs showing the total of the recurring and capital costs for the Teacher Training Programmes were made by the application of the formula given at page 50. These total cost projections have been presented in Table XXXII and shown graphically in Figure 8.

TABLE XXXII

TOTAL COST PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS
FOR THE YEARS 1969 TO 1988

(in lakhs rupees)

Year	PROJECTIONS BASED ON		
	Enrolment trend	School	School enrolment
	projections of	enrolment	projections
	Teachers' Training	trend	achieving universal
	Institutions	projections	education
1969	48.71	107.20	461.37
1970	53.14	117.29	427.42
1971	57.77	128.32	464.14
1972	62.60	140.40	502.43
1973	67.63	153.61	542.34
1974	72.88	168.06	583.93
1975	78.34	183.88	627.26
1976	84.03	201.18	672.39
1977	89.96	220.11	719.39
1978	96.14	240.82	768.32
1979	102.56	263.48	819.24
1980	109.25	288.27	872.23
1981	116.20	315.40	927.36
1982	123.44	345.08	984.70
1983	130.96	377.55	1044.32
1984	138.79	413.07	630.69
1985	146.92	451.94	870.22
1986	155.37	494.46	891.53
1987	164.16	540.99	1005.99
1988	173.28	591.89	1049.69

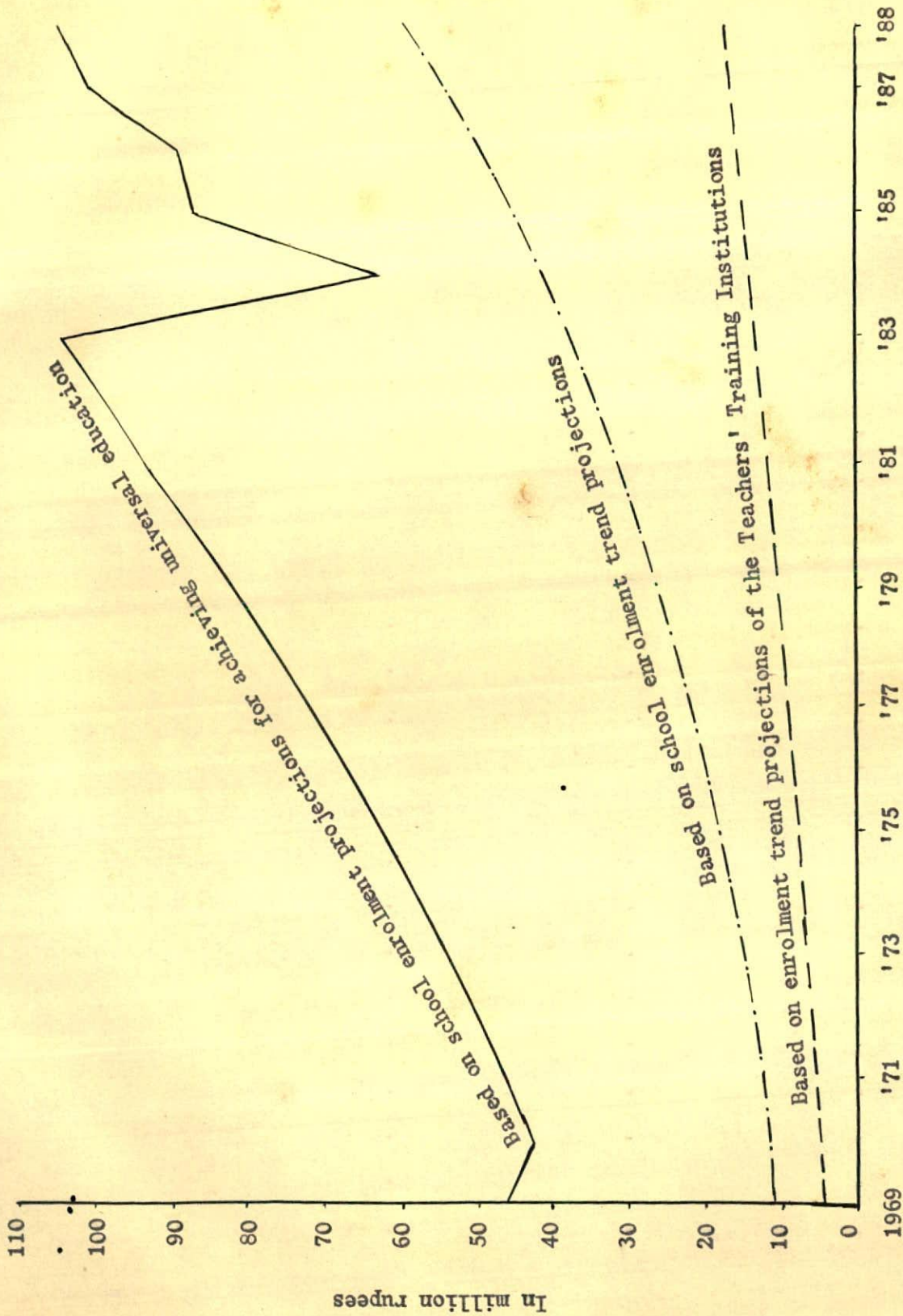


FIGURE 8

TOTAL COST PROJECTIONS FOR THE TEACHERS' TRAINING INSTITUTIONS FROM 1969 TO 1988

Table XXXII shows that the total cost for the Teachers' Training Institutions would be Rs.17,328,000 in 1988 if the enrolments in these institutions were made on the basis of the past trend of enrolments in these institutions. The total cost of these institutions was expected to be Rs.59,189,000 in 1988 if the enrolments in these institutions were made to fulfil the needs of the school enrolment increasing under their past trend. This cost would be more than three times the total cost of these institutions in the same year 1988, if the past trend of enrolments in these Teachers' Training Institutions continued. The two types of cost projections one based on enrolment trend projection of the Teachers' Training Institutions and the other based on the enrolment projections of the Teachers' Training Institutions calculated from the school enrolment trend projections, showed a gradual increase throughout the projection period.

The third type of cost projections for the Teachers' Training Institutions showed the total of the recurring and capital cost figures calculated from the enrolment projections of these institutions based on school enrolment projection for achieving universal education up to Class VIII by 1985. Under these projections the total cost for the Teacher Training Programmes was expected to be Rs.46,137,000 in 1969 and was expected to be Rs.42,742,000 in 1970. The cost figures for the years 1970 to 1983 showed a gradual increase and the cost for the year 1983 was estimated to be Rs.104,432,000. A sudden decrease in the total cost was expected in the year 1984 and again a gradual increase was

noted in the cost of the years 1985 to 1988. The reason for these irregularities was the same as explained in the discussion of the capital costs because the total costs were the totals of the recurring and the capital costs.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The problem of the study was to analyse the cost factors involved in the Teacher Training Programmes leading to the Degrees of Bachelor of Education, Master of Education and Master of Arts in Education in West Pakistan and to make projections of cost for these Teacher Training Programmes for each year from 1969 to 1988.

The main purpose of the study was to project cost for the Teacher Training Programmes for each year from 1969 to 1988. For the achievement of this purpose the data were to be collected from the Teachers' Training Institutions and the subsidiary purposes were to survey the process and problems of financing these Teachers' Training Institutions and to elicit suggestions from the heads of the institutions for the improvement of the financing process.

This study was started in April, 1969 and was completed at the end of August, 1970.

The method of the study involved document analysis, survey, interviews and projection calculations, which have been described below.

Document analysis. An analysis of the related documents was made to determine the sources of income and heads of expenditure of the Teachers' Training Institutions. Such documents included ledgers of the institutions, pertinent research studies and statistical year books.

Survey. A questionnaire was developed to identify the sources of income, the heads of expenditure and the actual amounts of income and expenditure during the fiscal years 1966-67, 1967-68 and 1968-69. The questionnaire also aimed at determining the financial set up of these institutions and included an item to elicit suggestions from the heads of the institutions for the improvement of the financial process.

The questionnaire had two parts. The respondents were required to answer the questions in the first part, which had thirty items dealing mainly with income and expenditure of the institution.

Interviews. The second part of the questionnaire consisting of items thirty-one to forty-one was used as a structured interview schedule and it dealt with the process of receiving the financial aids, the financial problems and the likely solutions to those problems.

The writer arranged personal visits to the Teachers' Training Institutions in November, 1969 for data collection and the heads of these institutions were interviewed during these visits.

Projections. The methodology involved in An Asian Model of Educational Development: Perspectives for 1965-80, was used for making the projections. According to this Model the cost for the Teacher Training Programmes could be projected on the basis of the enrolments for the Teachers' Training Institutions, which could be calculated from the secondary school enrolments. Hence the secondary school enrolment projections and the enrolment and cost projections for the Teachers'

Training Institutions were made as given below:

1. Secondary school enrolment projections. These projections were the enrolment estimates for Classes VI to X in West Pakistan from 1969 to 1990. There were two types of school enrolment projections: (a) school enrolment trend projections based on the trend of the enrolments in Classes VI to X in West Pakistan from 1948 to 1967 and (b) school enrolment projections for the attainment of universal education up to Class VIII by 1985.
2. Enrolment projections for the Teachers' Training Institutions for the years 1969 to 1989 were of three types: (a) enrolment projections for the Teachers' Training Institutions based on the past trend of enrolments in these institutions, (b) enrolment projections for the Teachers' Training Institutions based on school enrolment trend projections and (c) enrolment projections for the Teachers' Training Institutions based on school enrolment projections for achieving universal education up to Class VIII by 1985.
3. The cost projections for the Teachers' Training Institutions from 1969 to 1988 were also of three types (a) cost projections calculated from enrolment projections of the Teachers' Training Institutions based on their own past trend of the enrolments, (b) cost projections calculated from enrolment projections of the Teachers' Training Institutions based on school enrolment

trend projections and (c) cost projections calculated from enrolment projections of the Teachers' Training Institutions based on school enrolment projections for attaining universal education up to Class VIII by 1985.

The school enrolment trend projections were calculated on the basis of the past trend of enrolments in Classes VI to X during the years 1948 to 1967. The school enrolment projections for achieving universal education were made with the objective of bringing 100 per cent of eleven, twelve and thirteen year age groups in Classes VI, VII and VIII respectively by 1985. The actual enrolments in these classes in 1968 and Karwanski's projected population figures of eleven, twelve and thirteen year age groups for 1985, required for universal education up to Class VIII by 1985, were used to calculate the enrolments in Classes VI, VII and VIII in each of the years between 1968 and 1985, by linear interpolation. The enrolment figures for these classes for the years 1985 to 1990 were Karwanski's projected population figures of corresponding age groups for these years. The enrolments of Classes IX and X were calculated by the use of retention rate in the enrolments of Classes VIII, IX and X in the years 1964 to 1967.

These two types of school enrolment projections were used to calculate the enrolments in the Teachers' Training Institutions. The pupil-teacher ratio of 17:1 was used to calculate the total teacher requirement and an attrition rate of .11 was used in determining the additional teacher requirement. Besides the additional teacher requirement following fractions, as required by the methodology given

in the Asian Model, were used to calculate the enrolments in the Teachers' Training Institutions included in the study:

<u>Item</u>	<u>Fraction</u>
Fraction of secondary school teachers not coming from the Teachers' Training Institutions, included in the study	.71
Fraction of trained graduate teachers not joining the profession	.39
Fraction of enrollees of the Teachers' Training Institutions completing the programmes successfully	.80

Besides the two types of enrolment projections for the Teachers' Training Institutions, calculated from school enrolment projections, one set of the enrolment projections for the Teachers' Training Institutions, was made on the basis of their own past trend of enrolments. These enrolment projections for the Teachers' Training Institutions were used to project the cost for these institutions.

In calculating the additional pupil-places, required in the cost projections, 3 per cent replacement rate due to obsolescence was used. Besides following per-pupil costs, calculated from the data, collected from the Teachers' Training Institutions, were used in making the cost projections and an annual inflation rate of 2.5 per cent was used to project cost for the years 1969 to 1988 with 1968 as the base year.

<u>Item</u>	<u>Per-pupil cost</u>
Per-pupil recurring cost	1071.95
Per-pupil-place capital cost	4936.06

Findings. Important findings of the study were as follows:

1. Out of the nine existing Teachers' Training Institutions in West Pakistan, two institutions were there at the time of independence in 1947, three were established between the years 1950 to 1959 and the rest were established in the years 1961 to 1963. No institutions was established after 1963.
2. Out of these nine institutions, five were under the jurisdiction of the Punjab University, two under Sind University, one under Karachi University and one under Peshawar University.
3. Out of these nine institutions, only one institution at Lahore was exclusively for women offering Bachelor of Education Degree Programme.
4. Five of these nine institutions offered only Bachelor of Education Degree Programme, the institutions at Hyderabad, Karachi and Peshawar offered both Bachelor of Education and Master of Education Degree Programmes while the Institute of Education and Research at Lahore offered Master of Education and Master of Arts in Education Degree Programmes.
5. The Bachelor of Education Degree Programme was of one year duration at all the institutions and the minimum qualification for admission to this programme was a Bachelor's Degree in Arts or Science or an equivalent degree. College of Education, Peshawar and Institute of Education and Research, Lahore

offered Master of Education Degree Programme of one year duration and minimum qualification for admission to it was Bachelor's Degree in Education. Teachers' Training College, Karachi offered Master of Education Degree Programme of two year duration for those who had Bachelor's Degree in Education as a minimum qualification while the Institute of Education, Hyderabad offered Master of Education Degree Programme of two year duration for those who had Bachelor's Degree in Arts or Science or an equivalent degree and the students were given admission to the second year of the Master of Education Degree Programme if they had Bachelor's Degree in Education.

6. College of Education, Peshawar, Institute of Education, Hyderabad and Institute of Education and Research, Lahore charged annual tuition fees at the rates of Rs.252, Rs.150 and Rs.276 respectively. The other institutions did not charge tuition fee.
7. All the institutions charged some institution fees, but the rates varied from place to place. Teachers' Training College, Karachi charged institution fee at the rate of twenty rupees per head per year while the students at the Institute of Education and Research, Lahore had to pay Rs.180 per student per annum as institution fees.
8. Students in the Teachers' Training Institutions received financial aid from government grants and institution funds. Some other agencies like trusts and foundations also helped the students financially through these institutions.

9. The institutions at Hyderabad, Lyallpur and Sukkur did not receive government grants for the students' financial aid during the years 1966-67, 1967-68 and 1968-69.
10. The institutions under the jurisdiction of the Punjab University received about 87 per cent, 88 per cent and 82 per cent of the total government grants for the students' aid given to these Teachers' Training Institutions in the fiscal years 1966-67, 1967-68 and 1968-69 respectively.
11. The total area of the Teachers' Training Institutions covered by buildings was about six lakh square feet.
12. The land for almost all the Teachers' Training Institutions was obtained free of cost. It was, in most cases, donated by the local people.
13. The total cost of construction of the Teachers' Training Institutions at Karachi, Lyallpur, Multan, Peshawar and Sukkur and Institute of Education and Research, Lahore was Rs.17,037,033. Of this total cost an amount of Rs.11,560,000, which was about 68 per cent of the total construction cost of these six institutions, was spent alone on the construction of Institute of Education and Research at Lahore.
14. The approximate total cost of the land area of the Teachers' Training Institutions was Rs.15,788,900 in the year 1969-70.
15. The Institute of Education and Research at Lahore and Teachers' Training College at Lyallpur had some income from

endowments and investments. College of Education, Peshawar, Institute of Education, Hyderabad and Institute of Education and Research, Lahore had some income from the tuition fee but the Institute of Education and Research at Lahore received more amounts of money from the students' tuition fee than that of other two institutions. Although all the Teachers' Training Institutions did not charge tuition fee but had some income from other fees.

16. The Provincial Government of West Pakistan provided funds in the year 1966-67, 1967-68 and 1968-69 for recurring and capital expenditure to all the Teachers' Training Institutions. In addition to this the Institute of Education and Research, Lahore received an amount of Rs.436,500 during the fiscal year 1968-69 from the Central Government of Pakistan for a special research project.
17. The total enrolments of the Teachers' Training Institutions were 2,378, 2,617 and 2,799 during the years 1966-67, 1967-68 and 1968-69 respectively.
18. The main heads of the recurring expenditure in these institutions were salaries, allowances, scholarships, cost of instructional materials and contingencies. About three-fourths of the recurring expenditures were spent on the salaries during the fiscal years 1966-67, 1967-68 and 1968-69.
19. During the fiscal years 1966-67, 1967-68 and 1968-69, the

Institute of Education and Research, Lahore spent about 82 per cent, 93 per cent and 95 per cent respectively of the total expenditures on furniture and equipment in all the Teachers' Training Institutions.

20. The Teachers' Training Colleges were financially supported by the provincial government. The heads of the Training Colleges prepared and presented the budgets for the future year to the government through the Regional Director of Education. These budgets were approved by the Finance Department of the Government. The budgets for the College of Education, Peshawar, Institute of Education, Hyderabad and Institute of Education and Research, Lahore were handled by these institutions and their respective universities.
21. The amount unutilized during a particular fiscal year was surrendered to the government.
22. The problems related to financial matters of the Teachers' Training Institutions were identified as follows:
 - a) The procedure of getting the financial aids from government was lengthy and cumbersome.
 - b) The needs of the Teachers' Training Institutions were not determined objectively in sanctioning developmental grants.
 - c) The amounts granted for purchase of library books and scientific equipment were usually released at the end of the fiscal year. These amounts were not likely to be spent

wisely because of the short time at the disposal of the heads of the institutions.

- d) The Finance Department distributed the total developmental grants institution-wise without involving the heads of the institutions.
- e) The money allocated to the institutions were kept in government treasuries as a rule. But it caused inconveniencies because the treasuries, in most cases, were not located within a comfortable distance.
- f) In the case of Government Teachers' Training Colleges the construction work was done by the Public Works Department of the Government. But it had been found that the pace of work, in most cases, was rather slow.

23. The suggestions given by the heads of the institutions for improvement of the financial problems were as follows:

- a) The procedure of receiving the money allocated by the government should be simplified in a way that unnecessary time is not wasted.
- b) To determine the needs of the Teachers' Training Institutions objectively and to allocate developmental grants accordingly the involvement of the heads of these institutions seemed to be an absolute necessity.
- c) Grants for purchase of library books and scientific equipment should be made available to the institutions in

the early part of each fiscal year.

- d) the money granted for buildings and construction should be released in favour of the institution head, who should be held responsible for getting the work completed in time.
24. The enrolments in Classes VI to X in West Pakistan were likely to be 2,225,965 and 4,273,884 in the years 1980 and 1990 respectively if the trend of past enrolments in these classes continued. Thus the enrolment in 1980 would be about double the enrolment of 1970 whereas the enrolment in 1990 would be about four times the enrolment of 1970 under the same projections.
25. The average of the fractions of Class VIII enrolments in the years 1964 to 1967 joining Class IX in the following years was .7801.
26. The average of the fractions of Class IX enrolments in the years 1964 to 1967 joining Class X in the following years was .8323.
27. Under enrolment projections for achieving universal education up to Class VIII by 1985, a rapid and gradual increase was expected in the enrolments of secondary schools from 1968 to 1985. The secondary school enrolments would be 1,446,333 and 9,632,129 in the years 1969 and 1985 respectively under these projections. The rate of increase under the same school enrolment projections was expected to be comparatively slower in the years 1986 to 1990.

28. The pupil-teacher ratio in Classes VI to X in 1967-68 was found to be 17:1
29. Fraction of trained graduate teachers, in the new secondary school teachers was found to be .71.
30. Fraction of the trained graduate teachers not joining the teaching profession was found to be .39 on the basis of the data for 1964 to 1967.
31. Fraction of enrollees of the Teachers' Training Institutions completing the programmes successfully was calculated to be .80.
32. Under the enrolment trend projections of the Teachers' Training Institutions the enrolment in these institutions in 1989 was likely to be 7,902, which was about three times 2,799, the actual enrolment of these institutions in 1968-69.
33. The projected enrolments in the Teachers' Training Institutions showed a gradual increase in the years 1969 to 1989 and the enrolment was likely to be 24,831 in 1989 if the trained graduate teachers were to be provided for the secondary school enrolments increasing according to their past trend. This number was about nine times 2,799, the actual enrolment of the Teachers' Training Institutions in 1968-69.
34. The enrolments in the Teachers' Training Institutions were likely to be 53,068 and 49,680 in the years 1984 and 1989 respectively, if the trained graduate teachers were to be prepared under the target of achieving universal education up to Class VIII by 1985. It means that the enrolments of the

Teachers' Training Institutions were to be increased nineteen times and eighteen times in 1984 and 1989 respectively as compared to the actual enrolment of these institutions in 1968-69.

35. The per-pupil capital and recurring costs for the Teachers' Training Institutions were found to be Rs.4,936.06 and Rs.1,071.95 respectively.
36. If the enrolment of the Teachers' Training Institutions continued increasing according to the past trend of enrolment of these institutions the recurring cost of these programmes in 1988 would be Rs.13,440,000, which was more than four times the recurring cost of these programmes in 1969.
37. The recurring cost for the Teacher Training Programmes was expected to be Rs.40,861,000, if the trained graduate teachers were to be prepared for the secondary school enrolments increasing under their own past trend. This figure was more than twelve times the actual recurring cost of these Teacher Training Programmes in 1969.
38. The recurring cost for the Teacher Training Programmes was likely to be Rs.85,633,000 in 1988 if the trained graduate teachers were to be prepared for the secondary school enrolments increasing under the targets of achieving universal education up to Class VIII by 1985. This cost figure was more than double the cost under the school enrolment trend projections in the

same year and was more than six times the recurring cost in the same year, in case the past trend of enrolment in the Teachers' Training Institutions continued. In case of universal education achievement, the total recurring cost of the Teacher Training Programmes was comparatively more in 1984. This cost was expected to decrease in 1985 and showed a gradual increase from 1985 to 1988.

39. The capital cost for the Teacher Training Programmes was likely to be Rs.3,888,000 in 1988 if the past trend of enrolment in these programmes continued. This cost was more than double the capital cost for these Teacher Training Programmes in 1969 under the same projections.
40. The capital cost for the Teacher Training Programmes was likely to be Rs.18,328,000 in 1988 if the graduate teachers were to be trained for the school enrolments increasing according to the past trend of school enrolments. This cost figure was about five times the capital cost for these Teacher Training Programmes in 1988 under the capital cost projections based on enrolment trend projections of the Teachers' Training Institutions.
41. The capital cost for the Teacher Training Programmes was likely to be Rs.19,336,000 in the year 1988, in case the graduate teachers were to be trained for school enrolments increasing under the target of achieving universal education. Under these projections the capital cost for the Teacher Training Programmes was more in 1983 than the cost in 1988 and there was a negative

figure in 1984.

42. The total cost for the Teachers' Training Institutions was likely to be Rs.17,328,000 in 1988 if the enrolments in these institutions were made on the basis of their past trend of enrolments.
43. The total cost for the Teachers' Training Institutions would be Rs.59,189,000 in 1988 if the enrolments in these institutions were to be made to meet the needs of school enrolments increasing according to the past trend of enrolments in Classes VI to X.
44. The total cost of the Teachers' Training Institutions was likely to be Rs.104,969,000 in 1988 if the enrolments in these institutions were to be made to meet the targets of universal education up to Class VIII by 1985.

Conclusions

The following conclusions have been drawn on the basis of the findings of the study:

1. Of the nine institutions included in the study two were in existence before 1947, three were established between the years 1950 to 1959 and four institutions were established in the years 1961 to 1963. Thus this period from 1961 to 1963 showed comparatively rapid progress but no institution was established after 1963.
2. The Teachers' Training Institutions were not evenly distributed

in West Pakistan. There were more institutions under the jurisdiction of the Punjab University than under other universities. Moreover due attention was not paid in establishing Teachers' Training Institutions for women.

3. The duration of Master's Degree Course in Education was same in all the Teachers' Training Institutions except the one at Karachi. It seems to be an exception from the general pattern. In the fitness of things a uniform pattern should be followed by all the Teachers' Training Institutions.
4. The rates of fees were different at different institutions. The rates of fees were higher in the institutions at Hyderabad and Peshawar compared to the rates of fees at the Teachers' Training College at Karachi.
5. The main sources of income for the scholarships were the government grants, institution funds, and grants of some outer agencies like foundations and trusts. Newly established institutions at Lyallpur and Sukkur received no financial help for the students while the old institutions received handsome grants for the students' help. The Teachers' Training Institutions under the jurisdiction of the Punjab University received a heavy percentage of the total government grants of scholarships for all the institutions included in the study.
6. The sources of income for the Teachers Training Institutions were government grants, fees, endowments and investments.

7. The recurring and non-recurring were the main heads of expenditure in the Teachers' Training Institutions. The sub-heads of the recurring expenditure were salaries, allowances, contingencies, scholarships and the cost of instructional materials and scientific equipment. About three-fourths of the recurring expenditure were spent on salaries.
8. Insufficient grants for furniture and equipment were given to all the Teachers' Training Institutions, except the Institute of Education and Research, Lahore.
9. The process of receiving the financial aid in all the institutions was almost same. The budgets were prepared a year earlier and presented for approval. The amounts sanctioned were kept in government treasuries. The unutilised amounts were surrendered to the government at the end of the fiscal year.
10. The cumbersome and lengthy procedure of getting the financial aids for the developmental projects delayed the developmental schemes. The delay in receiving grants for purchase of library books, instructional materials and scientific equipment was likely to deteriorate the quality of the materials purchased. With the short time at the disposal of the heads of the institutions for purchase of these materials, a wise selection of the materials was not likely to be possible. As the needs of the institutions were not determined objectively there was every likelihood of sanctioning developmental grants to the

institution, not standing highly in need of these grants and some institutions highly in need of these grants might be ignored. Similarly when the priorities of the Education Department depended upon the likes and dislikes of a few officers there was a possibility of inappropriate allocations of money. The amounts sanctioned for construction of the institutions were given to Public Works Department and the pace of work in most cases, was rather slow.

11. Under the school enrolment trend projections the enrolment in Classes VI to X in 1990 would be four times the enrolment of these classes in 1970 under the same projections. If universal education up to Class VIII was to be achieved by 1985 the enrolment in Classes VI to X in 1990 was likely to be more than ten times the actual enrolment of these classes in 1968. Similarly the enrolment in these classes in 1985 would be more than nine times the actual enrolment of these classes in 1968. This rapid increase in the school enrolment does not seem to be attainable and the target of universal education up to Class VIII by 1985 seems optimistic and unrealistic when seen in the light of the past trend of enrolments in secondary schools.
12. The enrolments of the Teachers' Training Institutions in 1989 were expected to be nine times the enrolments of these institutions in 1969 in case the graduate

teachers were to be trained for the secondary school enrolments increasing according to their past trend. The enrolments of the Teachers' Training Institutions in 1989 were likely to be three times the actual enrolment of these institutions in 1969 if the past trend of enrolment in these Teachers' Training Institutions continued. It means that the enrolments of the Teachers' Training Institutions under the past trend of enrolments of these institutions were not likely to fulfil the teacher requirements of the secondary schools if the enrolments in Classes VI to X continued increasing according to their past trend of enrolments. The enrolments in the Teachers' Training Institutions were likely to be nineteen times and eighteen times in the years 1984 and 1989 respectively as compared to the actual enrolments of these institutions in 1969 in case the trained graduate teachers were to be provided for the school enrolments increasing under the targets of achieving universal education up to Class VIII by 1985. The achievement of such a rapid increase in the enrolments of Teachers' Training Institutions seems to be unrealistic in comparison with the trend enrolment projections of the Teachers' Training Institutions.

13. If the enrolments in the Teachers' Training Institutions increased according to their past trend the recurring costs in 1988 were likely to be about four times the recurring

costs in 1969. The recurring cost of these Teachers' Training Institutions in 1988 was expected to be about twelve times the recurring cost of these institutions in 1969, in case the trained graduate teachers were to be prepared for school enrolments increasing according to the past trend of enrolments in Classes VI to X. It means that in 1988 the recurring cost of the Teachers' Training Institutions under the school enrolment trend projections was expected to be three times the recurring cost of these Teachers' Training Institutions under the enrolment trend projections of the Teachers' Training Institutions. If the universal education up to Class VIII was to be achieved by 1985 the recurring cost for the Teacher Training Programmes in 1988 would be about twenty-eight times the actual recurring expenditure for these programmes in 1969. It means that a rapid increase in recurring cost was expected and practically the provision of such high funds seems unrealistic.

14. Similarly in the year 1988 the capital cost, needed to train the graduate teachers for the school enrolments increasing under their past trend, was expected to be four times the capital cost of the Teachers' Training Institutions if the enrolment of these institutions increased under their own past trend. The capital cost of the Teachers' Training Institutions in 1988 under the target of achieving universal education

was also expected to be quite high. The provision of so high funds does not seem to be within the means of a developing country like Pakistan.

Recommendations

On the basis of the findings and conclusions of the study, the following recommendations are made:

1. It has been found that in 1988 the enrolment of the Teachers' Training Institutions would be about eighteen times the actual enrolment of the Teachers' Training Institutions in 1968-69, in case graduate teachers were to be trained for the school enrolments increasing under the target of achieving universal education up to Class VIII by 1985. It means that the present number of the Teachers' Training Institutions would not be sufficient to train teachers for the achievement of universal education. Hence efforts should be made to establish new Teachers' Training Institutions to supply the required number of trained graduate teachers for the increasing school enrolments. The new institutions should be established in those areas of West Pakistan, where such institutions do not exist. Some Teachers' Training Institutions for women should also be established.
2. The duration of Master of Education Degree course should be equal in all the institutions of West Pakistan. Thus similar and equal facilities for teacher education can be provided for

the trainees in all the Teachers' Training Institutions in West Pakistan.

3. Like all the Teachers' Training Colleges there should be no tuition fee in College of Education, Peshawar, Institute of Education, Hyderabad and Institute of Education and Research, Lahore, because these institutions also give professional training and the professional colleges do not charge tuition fee. The charges other than the tuition fee should be nominal like the fees at Teachers' Training College, Karachi, so that the people are attracted towards these Teacher Training Programmes.
4. A scholarship grant should also be sanctioned to finance the deserving trainees in the Teachers' Training Institutions at Hyderabad, Lyallpur and Sukkur.
5. It has been found that the land for the Teachers' Training Institutions was, in most cases, donated by the benevolent citizens and organisations. It is recommended that such facilities should be explored while establishing new Teachers' Training Institutions in the future.
6. It has been found that one-fourth of the recurring expenditure was used to purchase library books, scientific equipment, instructional materials and furniture in the years 1966-67, 1967-68 and 1968-69. It is recommended that sufficient funds should be allocated for these items.

7. The needs of the Teachers' Training Institutions should be determined objectively before the grants for the developmental projects are made. A committee consisting of some educationists, economists, officers of the Finance Department and the heads of the Teachers' Training Institutions, should be made to evaluate the developmental needs of the institutions. The priorities should be fixed and the grants should be sanctioned on the basis of recommendations of this committee. The process of receiving the financial aids should be made less time consuming. The grants for purchase of library books, scientific equipment, instructional materials and furniture should be made available to the institutions in the early part of the fiscal year.
8. No projection is perfect in itself. It needs to be reviewed in the coming years to incorporate new changes. Hence similar projections are recommended to be carried out when new data are available. Similar studies can be conducted to project cost for different educational levels in Pakistan. Such studies may be undertaken with different population projections and applying different pupil-teacher ratios, as these are important factors in determining the size of the teacher requirement. Then a comparison of such studies can be made for the educational planning in the future.
9. This study has been based on the assumption that the retention rate in Classes VIII, IX and X will remain constant. It has also been assumed that attrition rate and the rate of the enrollees

of the Teachers' Training Institutions completing the programmes successfully will remain constant throughout the projection period. These assumptions may not hold good for all the times in the future. Hence some type of longitudinal studies are recommended to identify these rates over a period of time. This study was confined to the cost data collected from the Teachers' Training Institutions, included in the study. A similar study is recommended on the basis of the cost data of these Teachers' Training Institutions available in the government documents.

10. For the achievement of universal education up to Class VIII by 1985, the trained graduate teacher requirement is much higher than what is expected under the past trend of enrolments in Classes VI to X. The total cost incurred in training graduate teachers is also expected to be very high. Under the present circumstances it seems that a developing country like Pakistan can not provide so high funds. Hence it is recommended that, according to proposals for a new Education Policy, education should be introduced as a subject at college level and the graduates taking education as a subject in the colleges may be posted as teachers in the schools and some effective type of in-service programme may be introduced for such teachers. Double shift training college is another measure for training more graduate teachers on economic basis. It is also

recommended that the target of achieving universal education up to Class VIII by 1985 should be shifted to 1990 at the latest, as, under these projections, the achievement of this goal seems unrealistic.

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RADIO - BOND

MADE IN AUSTRIA

APPENDIX

DIO - BOND

DE IN AUSTRIA

APPENDIX A

QUESTIONNAIRE

This questionnaire has been developed for collection of data in connection with a research study, "Cost Projections for Bachelor of Education, Master of Education and Master of Arts in Education Degree Programmes in West Pakistan, 1969-1980." This study has been planned in partial fulfillment of the researcher's requirement for the Degree of Doctor of Education at the Institute of Education and Research, University of Dacca. Your cooperation in filling out the questionnaire is solicited.

PART I

1. Name of the Institution.
2. Location (Name of the city or town)
3. Year of founding
4. Please indicate the admission requirements and duration of study for each course (B.Ed., M.Ed., M.A. in Education) available in your institution.

Course or programme	Admission requirements	Duration in years
B.Ed.	:	:
M.Ed.	:	:
M.A. in Education	:	:

5. Please give the amount of annual tuition fees for each category of students:

Category of Students :	Per pupil annual tuition fees
1. B.Ed. :	
2. M.Ed. :	
3. M.A. in Education :	

6. What other fees or charges do students pay (e.g. Examination Fee, Book Fee etc.) annually? (The refundable amounts are not to be included.)

Other fees and charges :	Rate per pupil per year
1. Examination Fee :	
2. Union Fund :	
3. Red Cross :	
4. Book Fees :	
5. (Any other specify) :	
6. :	
7. :	
Total of other charges :	

7. Give the number of the students of the institution who receive some form of financial help, directly from the funds of the institution, from government or from other sources, and the total amount they receive from each source.

1966-67

A.

Type of	From Institution	From Government	From Other Sources
Financial Assistance	Number of Students	Total Ann- ual Amount	No. of Students
Total Ann- ual Amount	Total Ann- ual Amount	No. of Students	Total Ann- ual Amount
1. Stipends:	1	1	1
2. Scholar- ships	1	1	1
3. Free Student- ships	1	1	1
4. Lump grants	1	1	1
5. Book fee	1	1	1
6. Rent free residence	1	1	1
7. Others (specify)	1	1	1
8.	1	1	1
9.	1	1	1

1967-68

B.

Type of Financial Assistance:	From Institution	From Government	From Other Sources
Number of Students	Total Annual Amount	Number of Students	Total Annual Amount
No. of Students	Total Annual Amount	No. of Students	Total Annual Amount
1. Stipends:	:	:	:
2. Scholarships:	:	:	:
3. Free Student-ships:	:	:	:
4. Lamp grants:	:	:	:
5. Book Fees:	:	:	:
6. Rent Free residence:	:	:	:
7. Other (specify):	:	:	:
8.	:	:	:
9.	:	:	:

1968-69

C.

Type of Financial Assistance	From Institution	From Government	From Other Sources
Number of Students	Total Annual Amount	Number of Students	Total Annual Amount
1. Stipends:	:	:	:
2. Scholarships	:	:	:
3. Free Studentships.	:	:	:
4. Lamp Grants	:	:	:
5. Book Fees	:	:	:
6. Rent Free Residence	:	:	:
7. Others (specify)	:	:	:
8.	:	:	:
9.	:	:	:

8. What is the total area of the institution's land? (in sq.ft.)
- (a) Area covered by buildings
- (b) Area not covered by buildings
- (c) Total area in sq.ft.
9. Please give the area of land purchased in different years and the cost of that land in the year of purchase.

Year of Purchase	Total land Purchased in Acres	Total Price
:	:	:
:	:	:
:	:	:
:	:	:
:	:	:
:	:	:

10. What was the total value of all the land owned by the institution at the end of the fiscal year 1968-69? Rs.
11. What is the approximate cost per acre of land in the fiscal year 1968-69 in the neighbourhood of the institution? (to be collected from the head of the institution and the land owners in the neighbourhood of the institution)
- (a) From the head of the institution: Rs. per acre.
- (b) From the neighbouring land owners: Rs. per acre.
- (c) Average Rs. per acre.
12. What was the total amount of endowment of the institution
(Endowment is defined as any fund, sum of money or any money-producing property available to the institution either in whole

or in part for example, interest from principal) by the end of the fiscal year 1968-69? Rs.

13. What was the total amount of investment and money held in deposit or funds available to the institution by the end of fiscal year 1968-69? Rs.

14. What was the income from endowments and investments for the fiscal years:

1966-67? Rs.

1967-68? Rs.

1968-69? Rs.

15. What was the income from the gifts for the fiscal years:

1966-67? Rs.

1967-68? Rs.

1968-69? Rs.

16. What was the income from student tuition fees in the fiscal years:

1966-67? Rs.

1967-68? Rs.

1968-69? Rs.

17. What was the income from all fees other than tuition fees in the fiscal years:

1966-67? Rs.

1967-68? Rs.

1968-69? Rs.

18. How much money was received from Central and Provincial Government in the fiscal years 1966-67, 1967-68 and 1968-69?

Type of Expenditure	1966-67		1967-68		1968-69	
	Central Government	Provincial Government	Central Government	Provincial Government	Central Government	Provincial Government
1. For Recurring Expenses:	:	:	:	:	:	:
2. For Non-recurring Expenses	:	:	:	:	:	:
3. For Others (specify)	:	:	:	:	:	:
4.	:	:	:	:	:	:
Total :	:	:	:	:	:	:

19. How much money was received from the local agency other than Central and Provincial Governments, if any, in the fiscal years 1966-67, 1967-68 and 1968-69? (Local agency may be District Board, District Council, City Corporation or any other body other than Provincial or Central Government.)

1966-67

A.

Name of the local Agency	For Recurring Expense	For Non-recurring Expenses	Unspecified	Total

1967-68

B.

1968-69

C.

20. How much money do you expect to receive from Central or Provincial Government or other agencies in the fiscal year 1969-70?

Types of Expenses	Central Government	Provincial Government	Local Agencies
For Recurring Expenses			
For Non-Recurring Expenses			
For Unspecified Purposes			
Total			

21. How much money did you receive from any other source in the fiscal years 1966-67, 1967-68 and 1968-69?

1966-67

A.

Name of any Other Sources	For Recurring Expenses	For Non-Recurring Expenses	Unspecified	Total Amount Received

1967-68

B.

1968-69

C.

22. How much money was received from the

Government for salaries in the fiscal years:

1966-67? Rs.

1967-68? Rs.

1968-69? Rs.

23. How much money was received from the government for new building construction in the fiscal years 1966-67, 1967-68 and 1968-69?

Year	: Amount Received	: No. of sq.ft. for which the amount was given	: Amount actually spent
1966-67	:	:	:
1967-68	:	:	:
1968-69	:	:	:

24. What amount of money was received from government for the purchase of equipment in the fiscal years 1966-67, 1967-68 and 1968-69?

What amount was spent to purchase equipment?

Year	: Amount received for purchase of equipment	: Amount actually spent for the purchase of equipment
1966-67	:	:
1967-68	:	:
1968-69	:	:

25. What was the total income for the fiscal years:

1966-67? Rs.

1967-68? Rs.

1968-69? Rs.

26. Please give the number of the students of your institution for the following years:

Year	No. of students enrolled in the beginning of the year	No. of the students in the sixth month of the programme	No. of the students who completed the programme	Number passed
1966-67:	:	:	:	:
1967-68:	:	:	:	:
1968-69:	:	:	:	:

27. In the table given below, please give the total amount spent in the fiscal years 1966-67, 1967-68 and 1968-69.

Items for which money was spent	1966-67	1967-68	1968-69
a. Salaries of the teaching staff	:	:	:
b. Salaries of personnel other than teachers	:	:	:
c. Salaries of non-teaching administrators	:	:	:
d. Maintenance and establishment	:	:	:
e. Books and other materials for library	:	:	:
f. Welfare cost (meal, etc.) if any	:	:	:
g. Auxiliary cost (transportation, etc.)	:	:	:
h. Amount of scholarships and stipends.	:	:	:

Item for which money was spent	1966-67	1967-68	1968-69
i. Instructional materials other than library books			
j. Amount of free studentships			
k. Any other (specify)			
l.			
m.			
Total expenditure			

28. In the following table please enter the total amount spent for your institution on each item in the fiscal years 1966-67, 1967-68 and 1968-69 and the total area of that item.

Item for which money was spent	1966-67	1967-68	1968-69	Area (in sq.ft.)
a. Cost of site for the institution				
b. Cost of land area for building teaching and common facilities				
c. Cost of land area for building laboratories				
d. Cost of land area for building audi- torium and gymnasium				
e. Cost of land area for building workshops & other special educational facilities				
Total				

29. In the following table please enter the total amount spent on each item for furniture and other equipment in the fiscal year 1966-67, 1967-68 and 1968-69.

Item for which money was spent	1966-67	1967-68	1968-69
a. Cost for furniture and equipment, etc. for teaching and common facilities			
b. Cost for furniture and equipment, etc. for laboratories.			
c. Cost for furniture and equipment, etc. for auditoria and gymnasia.			
d. Cost for furniture and equipment, etc. for workshops and other school facilities.			
Total			

30. In the following table please enter the total amount spent for the teacher residence and the student residences for your institution on each item in the fiscal years 1966-67, 1967-68 and 1968-69 and total area in case the item involves area.

Item for which money was spent	:	1966-67	:	1967-68	:	1968-69	:	Area
a. Cost of the site for student residence	:	:	:	:	:	:	:	:
b. Cost for building student-residence bedrooms and dormitories	:	:	:	:	:	:	:	:
c. Cost for building student-residence common facilities kitchen, dinningroom and service facilities	:	:	:	:	:	:	:	:
d. Cost for furniture and equipment etc. for residence of students	:	:	:	:	:	:	:	:
e. Cost of site for teacher residence	:	:	:	:	:	:	:	:
f. Cost for building teacher-residence	:	:	:	:	:	:	:	:
g. Cost for furniture and equipment etc. for teacher- residence	:	:	:	:	:	:	:	:
Total	:	:	:	:	:	:	:	:

PART II

INTERVIEW SCHEDULE

DIRECTIONS: Please read each of the following four questions and indicate your response by putting a tick mark (✓) in the appropriate box against each.

	Yes	No
31. Do you give the estimate for the expected expenditure to the Government/Managing body in the beginning of the fiscal year?		
32. Do you get the proposed amounts from the Government/Managing body?		
33. Does the Government/Managing Body allocate funds without your demand?		
34. Do you spend all your income within the fiscal year?.....		
35. Do you give estimated budgets according to your needs or more than what you need?		
.....		
.....		
.....		

36. If you do not get your proposed budget from the Government/Managing Body, what per cent of the proposed amounts do you generally get? (mark with a tick (✓) the range of the percentage which is generally given to you.)

- 1. 0% to 25%
- 2. 26% to 50%
- 3. 51% to 75%
- 4. 76% to 100%

37. If you do not get the amounts according to your proposed budgets, what are the reasons for not getting the proposed amounts?

- a.
- b.
- c.
- d.
- e.

38. If some amount is not spent within the fiscal year, what do you do with that amount?

-
-
-

39. Please mention any other aspect you consider worth mentioning in the process of your getting the financial aid from the government.

- a.
- b.
- c.
- d.
- e.

40. What, in your opinion, are the weaknesses in the process of your getting the financial aid. (at most five)

- a.
- b.
- c.
- d.
- e.

41. Suggest some measures to remove these weaknesses (at most five)

- a.
- b.
- c.
- d.
- e.

APPENDIX B

LIST OF THE INSTITUTIONS

INCLUDED IN THE STUDY

1. Government Training College, Lyallpur
2. Government Training College, Multan
3. Government Training College, Sukkur
4. Government Teachers Training College, Karachi
5. Central Training College, Lahore
6. Lady MacLagan Training College, Lahore
7. College of Education, Peshawar University
8. Institute of Education, University of Sind, Hyderabad
9. Institute of Education and Research, University of the Panjab, Lahore.

APPENDIX C

PROGRAMME I

COMPUTER PROGRAM TO PROJECT SCHOOL ENROLMENTS ON THE BASIS
OF THE PAST TREND OF ENROLMENTS IN CLASSES
VI TO X IN WEST PAKISTAN

```

*FANDK1210
  DIMENSION Y(25),XX(3,45)
  5 READ 7,N,IBYEAR,IYMAX
  7 FORMAT(3I5)
  READ 10,(Y(I),I=1,N)
10  FORMAT (5F10.0)
  D=0.0
  E=0.0
  SUMX=0.0
  XSQ=0.0
  DO 20 I=1,N
  D=D+LOGF(Y(I))
  XI=I
  E=E+XI*LOGF(Y(I))
  SUMX=SUMX+XI
  XSQ=XSQ+XI*XI
20  CONTINUE
  FN=N
  B=(D*SUMX-E*FN)/((SUMX*SUMX)-(FN*XSQ))
  A=(D-(B*SUMX))/FN
  PUNCH 25,A,B
25  FORMAT(10X3HA= F15.8,10X3HB= F15.8//)
  DO 27 IT=1,3
  DO27 IY=1,IYMAX
27  XX(IT,IY)=0.0
  PUNCH 30
30  FORMAT(10X4HYEAR,10X16HNUMBER PROJECTED//)
  DO 40 I=1,IYMAX
  IYEAR=IBYEAR+I-1
  XI=I
  YL=A+B*XI
  YY=EXPF(YL)
  PUNCH 50,IYEAR,YY
50  FORMAT(9X,I5,10XF15.4)
  XX(3,I)=YY
40  CONTINUE
  PUNCH 60,((XX(IT,IY),IT=1,3),IY=21,IYMAX)
60  FORMAT (3F20.3)
:   END

```


PROGRAMME II

COMPUTER PROGRAM... TO PROJECT THE OUTPUT OF TRAINED GRADUATE
TEACHERS ON THE BASIS OF THE PAST TREND OF THE OUTPUT OF
THE TRAINED GRADUATE TEACHERS IN WEST PAKISTAN

```
DIMENSION Y(50)
READ 10, IBYEAR, IYMAX
10 FORMAT(2I5)
READ 20, (Y(I), I=1, IYMAX)
20 FORMAT (5F10.0)
SUMY=0.0
SUMX=0.0
SUMXY=0.0
XSQ=0.0
DO 30 I=1, IYMAX
  FI=I
  SUMY=SUMY+Y(I)
  SUMX=SUMX+FI
  SUMXY=SUMXY+(Y(I)*FI)
  XSQ=XSQ+(FI*FI)
30 CONTINUE
YMAX=IYMAX
SQX=SUMX*SUMX
B=((SUMX*SUMY)-(YMAX*SUMXY))/((SQX-(YMAX*XSQ))
A=(SUMY-(B*SUMX))/YMAX
PUNCH 40
40 FORMAT(10X, 4HYEAR, 10X, 16HNUMBER PROJECTED//)
DO 50 I=1, 31
  IYEAR=IBYEAR+I-1
  FI=I
  YY=A+B*FI
  PUNCH 60, IYEAR, YY
60 FORMAT (10X, I4, 10X, F15.3)
50 CONTINUE
END
```


PROGRAMME III

COMPUTER PROGRAM TO PROJECT SCHOOL ENROLMENTS WITH THE
OBJECTIVE OF ACHIEVING UNIVERSAL EDUCATION THROUGH
CLASS VIII BY 1985 IN WEST PAKISTAN

*FANDK1210

```

      DIMENSION X(5,5),Y(3,6),ET(3,24),XX(2),E(5,24),AA(3)
      READ 10,((X(I,J),I=1,5),J=1,5)
10    FORMAT (5F10.0)
      READ15,((Y(I,J),I=1,3),J=1,6)
15    FORMAT (3F10.0)
      DO 20 IT=1,3
      DO 20 IY=1,23
20    ET(IT,IY)=0.0
      DO 30 I=3,4
      II=I-2
      XX(II)=0.0
      II=I+1
      DO 40J=1,4
      J1=J+1
40    XX(II)=XX(II)+X(II,J1)/X(I,J)
      XX(II)=XX(II)/4.
30    CONTINUE
      PUNCH 35,((XX(I),I=1,2)
35    FORMAT(/10X,8HRATE8-9=F10.8,15X,9HRATE9-10=F10.8//)
      DO 50 K=1,3
50    AA(K)=(Y(K,1)-X(K,5))/17.
      DO 60 L=1,5
60    E(L,1)= X(L,5)
      DO70 M=2,18
      FM=M
      DO 80 M1=1,3
80    E(M1,M)=E(M1,1)+(FM-1.)*AA(M1)
70    CONTINUE
      DO 72 M5=19,23
      M7=M5-17
      DO 74 M6=1,3
74    E(M6,M5)=Y(M6,M7)
72    CONTINUE
      DO 76 M8=2,23
      M9=M8-1
      DO 78 MA=4,5
      MX=MA-3
      MP=MA-1
      78 E(MA,M8)=E(MP,M9)* XX(MX)
      76 CONTINUE
      DO 100 IY=1,23

```



```
ET(3,IY)=0.0
DO110 IX = 1,5
110 ET(3,IY)=ET(3,IY)+E(IX,IY)
100 CONTINUE
PUNCH 130
130 FORMAT(15X, 2HVI,9X 3HVII, 8X4HVIII,10X2HIX,11X1HX//)
PUNCH 140
140 FORMAT(1X 4HYEAR/)
DO 150 IY=1,23
IYEAR=1967+IY
PUNCH 160,IYEAR,(E(IX,IY),IX=1,5)
160 FORMAT(15,5F12.2)
150 CONTINUE
PUNCH 170
170 FORMAT(////)
DO 180 IY=1,23
PUNCH 190,(ET(IT,IY),IT=1,3)
190 FORMAT(3F20.3)
180 CONTINUE
END
```


VITA

NAME: Muhammad Maqsood Alam

PLACE OF BIRTH: Village-Sandhran, District Jallundhr, India

DATE OF BIRTH: June 15, 1942

PARENTS: Hafiz Gulzar Ahmad
Mubarak Bibi

MARITAL STATUS: Married

Wife Musarrat Khanam

Children Tayyaba (5), Tayyab (3)

NATIONALITY: Pakistani

EDUCATION:

Matriculation D. B. High School Khanqah Dogran
District Sheikhupura, West Pakistan

I. Sc. Government College, Lyallpur, West Pakistan

B. A. University of the Punjab, Lahore, West Pakistan

B. Ed. Central Training College, Lahore, West Pakistan

M. Ed. Institute of Education and Research, Lahore,
West Pakistan

M. A. (Persian) University of the Punjab, Lahore, West Pakistan

M. A. (Urdu) University of the Punjab, Lahore, West Pakistan

TEACHING EXPERIENCE: Headmaster, Government Middle School
Dera Malla Singh, District Sheikhupura,
West Pakistan

PROFESSIONAL ORGANISATION: Member, Punjab Teachers' Union