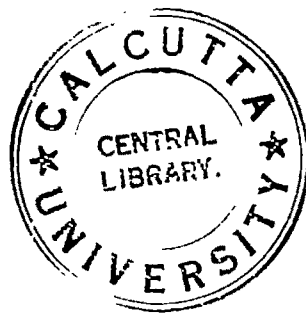


CHAPTER THREE

METHODOLOGY



3.1. *Frame of Reference of the Present Study :*

The National Policy on Education Review Committee had established that the Policy framework the National Policy on Education, 1986 enunciated is robust and can guide the educational development of the country for a long time to come. There are, however, many exceptions, the best example of which is adult literacy. The total literacy campaign approach has emerged as a viable model and has transformed the perception of universal adult literacy from one of the hopeless dream to an achievable prospect. The wisdom of hindsight as well as the evaluation of major programmes launched facilitated the revision (NPERC, 1990).

The National Policy on Education, 1986, has, interalia, various objectives such as (a) creation of ability to read and write, (b) promotion of national integration, (c) environment conservation, (d) promotion of central creativity of the people and as such small family norm with emphasis on women's equality. Adult education is the responsibility of the entire Nation and is also connected with functional literacy (NIE, 1986).

The National Policy on Education Review Committee (NPERC, 1990), therefore, has highlighted the fact that our people continue to remain deprived of education, which is one of the major needs for human development. Our people comprise 50% of the world's illiterate chunk, their children being without acceptable level of primary education. The government's policy accordingly the highest priority to education is for the creation of a humane and enlightened society. The women as mother have to play a vital role for making their children good citizens of tomorrow. Further, the backward classes and minorities have to be given suitable opportunities for raising their standards.

The National Literacy Mission (NLM), established on 5th May, 1988, had the objective of imparting functional literacy to 80 million illiterate adults in 15-35 age group by 1995 bringing within its fold potential learners in the age group 9-14 and above the age of 35 years (Report on the final evaluation of total literacy campaign in North 24-Parganas, 1993).

To accomplish their objectives the National Literacy Mission has put forward the following objectives :

- (i) Basic literacy for about 200 hours spread over six months, which will basically be a guided learning programme.
- (ii) Teaching learning material to include the concept of health, family welfare, immunisation, nutrition, maternity protection, child care protection of environment, small family norms and women's equality.
- (iii) Ensuring detailed evaluation qualitative as well as quantitative in a systematic, simple intelligible and technically sound manner.
- (iv) Scores of competencies, to be achieved in reading, writing and numeracy skills to be clearly defined.
- (v) A manual on evaluation techniques to be prepared (NLM Norm, 1988).

In West Bengal after implementation of mass literacy campaign (Total literacy campaign) by the Government of West Bengal, evaluation of literacy has also taken place and a number of districts have declared as fully literate by the National Literacy Mission Authority. This work has continued to be done by different agencies and committees appointed by the State and Central Governments time to time for different districts. Often there were neither any objective criteria nor any standard scientific materials for such mass evaluation. The present study is proposed to contribute towards that end.

In the present study attempts have been made in the construction and standardisation of a number of parallel test (four) by which the gains of the neo-literates can be measured by scientific monitoring procedure on lines of the NLM norms and the impact of literacy described by the National Literacy Mission.

3.2. Major Research Assumptions :

- (i) There are sufficient learning centres in the district with the infra-structural facilities to provide literacy to the neo-literates as per the norm of National Literacy Mission.

- (ii) At the end of the semester all the neo-literates can be declared literate in terms of NLM norms so that they can join the post-literacy and continuing education.
- (iii) All the neo-literates are growing conscious about health, child care, immunisation, family welfare, nutrition, maternity protection of environment and women's equality due to the impact of literacy.
- (iv) The distribution of all the psychological test measures of neo-literates reflects a parity with the measures competencies achieved in reading, writing and numeracy skills.
- (v) The distribution of attitude scores regarding the impact of literacy also reflects a parity with their learning gains.
- (vi) All the parallel forms used for assessing learning gains are absolutely parallel in statistical sense.

3.3. Sample Selection :

The sample frame consisted of a total 218 Grampanchayates and 24 Municipalities is covering the total area of the district. The target population of this study consisted of the persons in the age ranges 9-14 years and 15-50 years, who were illiterates and brought to the learning centres (LCS) set up for the purpose and continues with fair amount of regularity. Simple random sampling technique (Lahiri, 1954) was followed to select 21 GPs and 8 Municipalities out of total 218 GPs and 24 Municipalities for the study.

To ensure good representativeness of the target population across the length and breadth of the district an optimum sample size was decided upon to make a possible balance between sampling and non-sampling errors. For an efficient sample design, a two stage stratified sampling procedure was adopted. The four subdivisions of the district, namely Barasat, Barrackpur, Basirhat and Bongaon, formed the four rural strata. Similarly, 8 Municipalities constituted 8 strata in the urban sector. In rural areas Grampanchayets and the learning centres under them were considered as first and second stage units respectively. Similarly, in the Urban Sector,

Municipal Wards and the Learning Centres under them were considered as first stage and second stage units respectively. In both stages simple random samples without replacement were drawn.

On the basis of the above Methodology 21 Grampanchayets (GPs) and 24 Wards were brought under the purview of this investigation.

A total of 48 and 46 learning centres were chosen in each of these selected rural and urban units. A total of 809 learners (female = 519 and male = 290) in the rural and in the Urban Units were ultimately examined. Particulars of the sample distribution are shown in the Table 3.1 below and in fig.3.1 below;

Table 3.1 : Particulars of Sample Distribution

Sub-division	Gram Panchayet (GP)							Municipality						
	To- tal No.	No. Sel- ect- ed	No. of LC Sel- ect- ed	No. of Learners				To- tal No.	No. Sel- ect- ed	No. of LC Sel- ect- ed	No. of Learners			
				09-14		15 & above					09-14		15 & above	
			M	F	M	F				M	F	M	F	
Barasat	68	8	15	14	10	47	33	4	2	10	13	22	11	33
Bongaon	38	3	9	13	16	16	29	1	1	6	14	14	17	17
Basirhat	90	7	17	32	44	56	73	3	1	5	13	11	26	20
Barrackpur	22	3	7	14	17	16	31	16	4	27	29	35	19	134
Total	218	21	48	73	87	135	166	24	8	48	69	82	73	204

3.4. Level of Learning Assessed :

The object of the study is to ascertain the learning gains of the neo-literates by a scientific monitoring procedure tuned to the National Literacy Mission Norms. The National Literacy Mission (NLM) has formulated a norm for literacy for the learners at the end of minimum 200 hours of learning. These norms are :

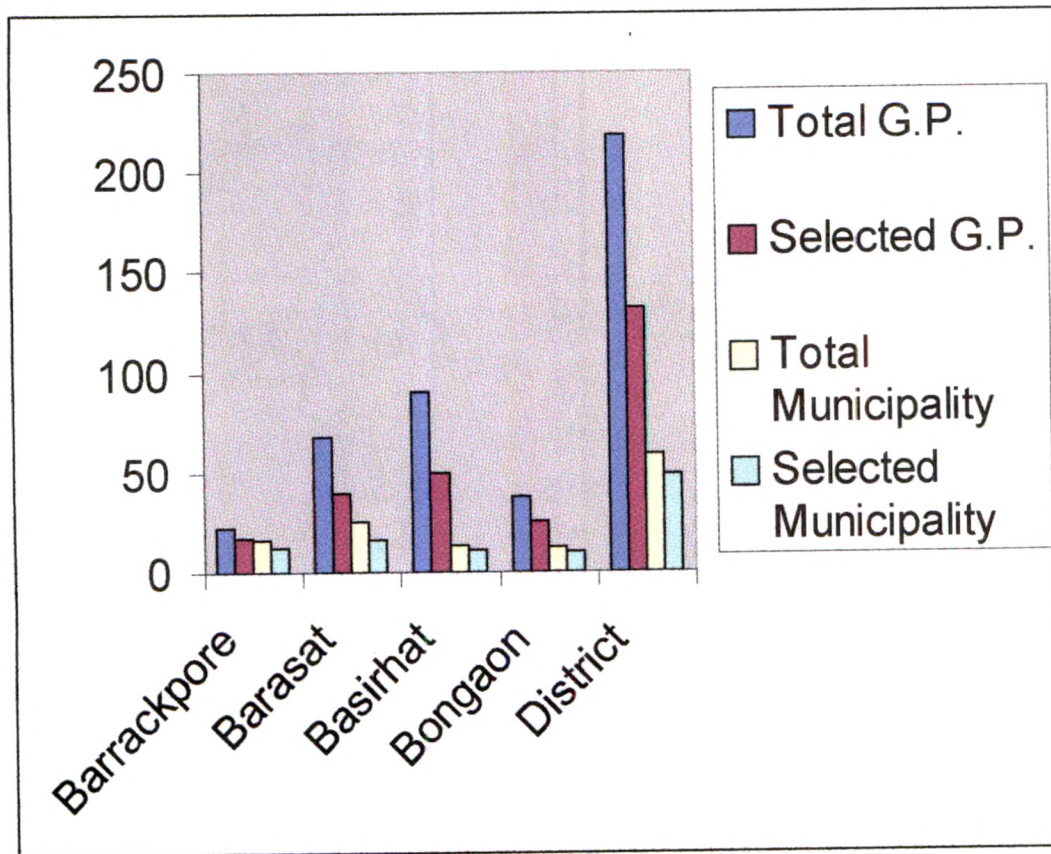


Figure:3.1 Showing The Sub-divisionwise Breakup Of Gram Panchayets(GP) And Municipality(M) And The Numbers Selected

(A) Reading :

- i) To recognise all letters of the alphabet.
- ii) To read aloud with comprehension, simple sentences at the speed of 30 words per minute.
- iii) To be able to read and understand road signs, posters and simple messages.

(B) Writing :

- i) To be able to write the learners' own names, names of family members and addresses.
- ii) To be able to transcribe, with proper spacing and alignment, a simple short passage having small sentences.
- iii) To write independently short letters, applications and forms of daily use Money Order, Bank Form etc.
- iv) To take dictation at the speed of 50 words per minute.

(C) Numeracy :

- i) To read, write and recognise numbers from 1 to 100.
- ii) To work out simple addition, subtraction, multiplication and division (sums upto two digits).
- iii) To be able to read a clock, a calender.
- iv) To have a working knowledge of weights, measures, currency, distance, proportion and interest (without fractions), as appropriate to the life-style of the learners.

However, the above National Literacy Mission Norms have to be necessarily considered in the context of the prescribed curriculum for the present study.

3.5. Areas of Curriculum Considered :

For the purpose of objective evaluation sole emphasis was given on the knowledge acquired in learning centres on vernacular (Bengali) reading and writing and numeracy (Arithmetic). The rationale for the said emphasis rests on their utility and importance in regard to capability of the neo-literates to continue their education on the post-literacy level.

3.5.1. Tools for Evaluation :

A. Tests : Considering the factor of time constraint, convenience of the learning centres, learners and the organisational set up, it was decided to adopt the written technique, in general and to use short answer and objective type achievement tests. Besides this, an oral technique was also adopted to measure the reading ability. Accordingly, an evaluative tool was structured by the present investigator after the following steps for the verification of 2nd and 6th research assumptions :

- i) Literature and curriculum were collected from the State Resource Centre (SRC).
- ii) Patterns of questions were collected from the SRC, team members of internal and external evaluation teams, set up for the evaluation of Total Literacy Campaign (TLC) of the district of North 24-Parganas and other adjacent districts, from the officers of the respective districts.
- iii) Items for evaluation were constructed on the basis of the literature and other materials collected with the help of subject matter experts and experts from Indian Statistical Institute and SRC.
- iv) Items of the tests were all non-textual, oriented with class lessons without hampering the standard of the prescribed curriculum and NLM norms for vernacular and numeracy.

- v) Items were mostly objective type with a few short answer type which could be answered within an hour or so.
- vi) The test contents were made as much homogenous as possible giving high content validity. Standard colloquial Bengali language was used for the items and the directions were brief and simple.
- vii) Four parallel sets of questions thus prepared from these pool of items, as each set containing questions of reading, writing and numeracy as per the directions of National Literacy Mission.
- viii) After obtaining experts opinion for each set of test the tools were prepared as pilot, which were then pretried on 70 neo-literates in nine total Literacy Campaign Learning Centres in and around Calcutta and Baranagar.
- ix) Following the results of item analysis and same modifications final tests of four parallel forms were developed.

Table 3.2 : Salient features of the tool for evaluation according to the NLM Norms

Major Subject	NLM Norms	Number of Item
Bengali Writing	<p>i) Personal identification : Covering learner's own name, age, sex, occupation, name of the learning centres, Grampanchayets/Municipality etc. address transailing with proper spacing and alignment.</p> <p>ii) Understanding comprehension : Ability of reading (silently) and understand of the matter.</p> <p>iii) Identificattion Objects : Recognising different types of animals, fruits,vegetables,birds,flowers etc.</p> <p>iv) Writing ability : Dictation, writing letters (only for age group 15 and above).</p>	<p>1 and 2 with thirteen sub-items</p> <p>2, 3 and 4 with 8 items</p> <p>2, 5 and 6 with 7 items</p>

Contd.....

Table 3.2 - Contd.

Major Subject	NLM Norms	Number of Item
Reading (loud)	i) Recognising the letters of the alphabet. ii) Reading aloud with comprehension simple sentences at a speed of 30 words per minute.	1 and 2 Items
Numeracy	i) Counting numbers : Covering numerals from 1 to 100. ii) Computational ability : Working out simple addition, subtraction, multiplication and divisions (sums upto two digits). iii) Solving of Mathematical Problems : Working knowledge of weights, measures, currency, distance, time, proportion interest as appropriate to the life-style of learners.	8-16 Items 12-20 Items 21-28 Items

B. Special Tests : Besides these four parallel forms of achievement tests of reading, writing and numeracy a few other tests were also used as special tests on a small sample of 200 neo-literates selected by probability proportion to size (PPS) technique of sampling for verification of fourth research assumptions :

i) Raven's Progressive Matrices Tests :

Competencies assessed were (a) ability of simultaneous cognitive processing, (b) intellectual reasoning and (c) accuracy of discrimination, analogies, simentation and attention of pattern and other logical relations.

ii) Wechsler Digit Span Forward Test (1974) :

Competencies assessed were (a) ability of successive cognitive processing, (b) span of memory and (c) ability to recall.

C. Schedules : Besides these tests three schedules were specially designed for all the learners for the verification of 1st, 3rd and 5th research assumptions.

i) Learner's Schedule :

Two pages schedule consisting of identification, socio-economic information, family background and other related background information of the learners.

ii) Schedule About The Learning Centre :

Two pages schedule seeking information about the learning centre, learners volunteer trainers (VT), method of teaching, evaluation etc.

iii) Special Type Of Schedule Regarding The Impact Of Total Literacy Campaign (TLC) Programme :

This schedule was specially prepared for the learners, Volunteer Trainers (VT), Master Trainers (MT) and a few non-literates who did not join any learning centre about their attitude towards TLC Programme and for a general view about impact of the literacy programme in the district.

3.6. Collection Of Data :

Before the actual field study certain formalities and preparatory work had to be gone through. The proposal for study was intimated to the Secretary, Mass Education Extension Department, Government of West Bengal, District Magistrate, North 24-Parganas District, Sabhadhipati and President, Zilla Saksharata Samity, Pradhan of the Grampanchayets, Chairman of the Municipalities and the booth level committees, under whose jurisdiction the learning centre fell. All of them and their respective officers provided and assistance and help. Testing schedule was fixed up with the help of booth level committees and the voluntary trainers (VTS) of the respective learning centres.

The study was then carried out simultaneously in three stages which are as follows :

- i) General reading and writing test for all the learners present on that day in the selected learning centres.
- ii) Special psychological tests were applied to 200 learners randomly selected from 20 learning centres also selected randomly from the larger pool (Table 3.1), equip proportionately.
- iii) Learners schedules and the special schedules were also filled in simultaneously after the test in order by calling at the households of the learners.

All the learners of the selected learning centres were tested in their respective learning centres during the learning hours, i.e., in the evening and night hours. After preliminary rapport and explanation about the tests, before administering the same, actual tests were taken. Individual attention was given to each learner so that he/she could overcome the initial stiffness and feel at home. The tests were held as going tests under power condition. For dictation matters were read out slowly and repeatedly indicating the pauses (punctuation marks). In testing the reading skill, learners were taken to a separate room one after another. Time taken for reading were also noted. Scoring of the reading ability was done on the spot.

Special tests were given to the selected learners of the selected learning centres. Such as Raven's Progressive Matrices Test and Wechsler Digit Span Forward Test were given to each learner in a separate room one after another. All these tests were administered and scored as per manual instructions.

Learner's schedules and the special schedules were also filled in simultaneously or after the test is over by calling at the households of the learners. Centre schedules were also collected from the voluntary trainers duly filled in.

Special Schedule For Impact :

On the following day the special schedules regarding the Impact of Total Literacy Programme were campaigned to the Voluntary Trainers (VTS), Master Trainers (MTS), Key Persons (KPS), organisers and illiterate persons who did not join in the

learning centre selected randomly from the locality of the selected learning centres by calling at their respected households for a general view about the impact of literacy programmes in the district.

3.7. Scoring And Evaluation Of Data :

With the help of five subject matter experts and acceptable scoring procedure for Bengali numeracy, reading and writing ability has been developed. It was unanimously agreed that in order to ascertain even the partial knowledge on the part of a learner, any positive response in the right direction was to be rewarded (Table 3.3) and the benefit of doubt would be given in his/her favour.

Table 3.3 : Scoring rationale of the test items, subjectwise

Subject	Points to be considered for Scoring Right/ Wrong Answer	Applicable for
Identifi- cation	1) Score "1" for each right identification 2) Score "0" for each wrong identification Maximum possible score = 5	For all the items
Vernacular	a) 1) Score 1 for each right answer 2) Score 0 for each wrong answer Maximum possible score = 40	For all the items
Letter writing	b) 1) Self Address entered correctly } 1 Data for each 2) Correct Sentence for = 1 Maximum possible score for the body = 4 3) Sender's Address = 1 Written correctly = 1 Global score - Good = 3 Fair = 2 SoSo = 1 Maximum possible score = 10	

Contd.....

Table 3.3 - Contd.

Subject	Points to be considered for Scoring Right/ Wrong Answer	Applicable for
Reading	1) For each correct identification = 1 Maximum possible score = 6 2) For letter identification and correct pronunciation of each word = 1 Maximum possible score = 5 3) Correct reading of each sentence = 1 Maximum possible score = 5	For all the items
Numeracy	1) Score 1 for each right answer 2) Score 0 for each wrong answer Maximum possible score = 50	For all the items except one

By summing up scores for all the items of each test, total scores for reading, writing and numeracy for each learner were obtained. The reliability coefficients of all these tests obtained by applying Kuder-Richardson formula-20, was varying between 0.82 to 0.90, indicating very high degree of internal consistency or homogeneity of these tests. Then all the three raw scores of each learner for reading, writing and numeracy were then added up after converting into the standard score of ability. These scores thus obtained were then converted into percentages in order to compare with the National Literacy Mission Norms, Means and other statistics were then computed for verification of the hypothesis.

3.8. Statistical Treatment Of Data :

In present study the investigator has to deal with the measures from different heterogeneous groups of learners, e.g., gender, age, ecological difference, different socio-economic backgrounds in regard to their learning abilities. To determine the simultaneous comparison of several means and examine the nature of statistical relationships between the experimental and dependent variables, the sets of measures were subjected to the Analysis of Variance (ANOVA) in order to test the significance of differences if there is any.