SUMMARY

"No nation can leave its security to the police and the army to a large extent. National security depends upon the education of citizens, their knowledge of affairs, their character and sense of discipline and their ability to participate effectively in security measures."

- Kothari Commission

1.0 INTRODUCTION:

Education is the basic need of life. To educate a common man to understand his rights and duties and to enable him to lead a fuller and richer life, is the urgent and basic responsibility of democratic government.

1.1 HISTORICAL BACKGROUND:

Literacy work took the shape of a mass movement in 1937. The period of 1937-42 was a good beginning for adult education. Twenty nine lakh adults were made literate during 1937-42. There were 1.31 lakh centres in which 15 lakhs adults were made literate during 1942-47.
1.2 **ADULT EDUCATION UNDER FIVE YEAR PLANS**

During First Five Year Plan (1951-56) 35 lakhs were reported to have been literate. In Second Five Year Plan (1956-61), 40,54,530 adults were reported to have been literate. Several efforts have been done during Third Five Year Plan (1961-65) to achieve cent percent literacy in 20 years. The programme of functional literacy had covered about 30 lakh farmers during the Fourth Five Year Plan (1969-74) and about 50,000 attended the functional literacy classes every year. The educational strategy in the Fifth Five Year Plan (1974-79) was built on the assumption that formal and non-formal education should be co-related and integrated. 'National Adult Education Programme' was launched on October 2, 1978, with the object of providing adult education to 10 crore adults in the age-group (15 - 35) within five years.

New Education Policy, 1986 envisaged that adult education would be a phased time-bound programme, covering 40 million by 1990 and another 60 million by 1995. It is expected that about 11.08 crore illiterates in 15 - 35 age-group would have to be covered by the end of the eight plan to achieve hundred percent adult literacy.

The Adult Education Programme is conducted in three stages. The researcher intends to concentrate on the third stage i.e. neo-literacy stage which is designed to enable the neo-literates to make effective use of literacy and numeracy skills
achieved and is devoted to the improvement of these skills through self-learning.

On 5th May 1988, National Literacy Mission was launched. The goal of this programme is to impart functional literacy to 80 million illiterates in 15 - 35 age-group by 1995. After National Literacy Mission was established the most significant development was the launching of a mass campaign for total literacy in Ernakulam district of Kerala on January 26, 1989. The objective is to cover 345 districts during the Eight Plan, and make 100 million people functionally literate.

1.3 POST-LITERACY PROGRAMME FOR NEO-LITERATES

The main purpose of post-literacy programme was to help the neo-literates in order to raise the literacy level acquired and to sustain their learning interests. In this direction the establishment of Jana Shikshana Nilayam was the important step to organise post-literacy and continuing education programme.

1.4 NEED OF LITERATURE FOR NEO-LITERATES

Literacy status of neo-literates has shown, that suitable reading material for neo-literates is urgently needed otherwise they will tend to return to illiteracy after short time.
1.5 **EDUCATIONAL TECHNOLOGY IN ADULT EDUCATION PROGRAMME**:

The concept of 'Educational Technology' refers to the application of educational principles for the solution of practical educational problems. The main objective of introducing technology in Adult Education Programme was promoting a qualitative change in the living and working conditions of adult learners.

1.6 **PROGRAMME INSTRUCTION – ITS CONNOTATION**:

The objective of programmed instruction was to improve the teaching-learning process with the use of educational technology. There were five basic principles of Programmed Instruction, which should be kept in mind while preparing the programme text:

1. Thorough analysis of subject-matter in the form of segments of information and each segment is called as 'frame'.

2. Immediate confirmation of the right answers.

3. Active responding on the part of the learner.

4. The learner proceeds at his own pace.

5. Student testing is possible which is helpful for teachers to modify the weak portion of the programme. The students can also evaluate their performance on the programme.
1.7 NECESSITY OF ENVIRONMENTAL EDUCATION:

The goal of environmental education was to improve all ecological relationships including the relationship of humanity with nature, and people with their surrounding. An adult learner saw utility only in things that satisfied his aspirations and fit to his level of mental development, field of experience and felt needs. Therefore, in order to preserve, it was enrich and safeguard the environment, essential to plan environmental education programmes according to the interest, needs, attitudes, values, memorization, ability, language, skills and attitude towards instructors, ways of looking at things and wide experience of the adult neo-literates.

1.8 JUSTIFICATION OF THE PROBLEM:

In Indian context where more than 63% of the population was illiterate, the urgency of environmental education for them was self-realised. Hence to give a shape to the dream of educated Nation that emphasised an environmentally literate citizenary and to provide mental nourishment to neo-literates, there was an urgent need of literature based on their bio-physical environment. Attempts in the field of curriculum development and environmental education had been made in India. Generally these attempts were made at school level. Like school students, it was also essential to develop a well equipped curriculum for neo-literates directly related to their life experiences. Bearing this in mind the researcher felt the need to develop post-literacy material for the neo-literates.
1.9 **STATEMENT OF THE PROBLEM** :

The problem of investigation may formally be stated as:

"Development of Post-literacy Material of Environmental Education For Neo-literates Through Programmed Text."

1.10 **OBJECTIVES OF THE STUDY** :

The main objectives of the study were as follows:

1. To develop the post-literacy material for neo-literates in the area of 'Food' through Programmed Text.

2. To develop the post-literacy material for neo-literates in the area of 'Water' through Programmed Text.

3. To ascertain the effectiveness of the developed post-literacy material for neo-literates in the area of 'Food' taught through Programmed Text.

4. To ascertain the effectiveness of post-literacy material for neo-literates in the area of 'Water' taught through Simple Text and Programmed Text.
1.11 HYPOTHESIS OF THE STUDY:

The main hypotheses related to research area 'Food' are as follows:

1) "There is no significant difference between the achievement score of neo-literates taught the topic "Food & Health" through Simple Text and Programmed Text.

2) There is no significant difference between the achievement score of neo-literates taught the topic 'Balanced Diet' through Simple Text and Programmed Text.

3) There is no significant difference between the achievement score of neo-literates taught the topic 'Healthy Cooking' through Simple Text and Programmed Text.

4) There is no significant difference between the achievement score of neo-literates taught the topic 'Digestive System' through Simple Text and Programmed Text.

5) There is no significant difference between the achievement score of neo-literates taught the topic 'Malnutrition' through Simple Text and Programmed Text.
6) There is no significant difference between the achievement score of neo-literates taught the topic 'Vitamins' through Simple Text and Programmed Text.

7) There is no significant difference between the achievement score of neo-literates taught the topic 'Meal Planning' through Simple Text and Programmed Text.

8) There is no significant difference between the achievement score of neo-literates taught the topic 'Special Diets' through Simple Text and Programmed Text.

9) There is no significant difference between the achievement score of neo-literates taught the topic 'Food Storage and Preservation' through Simple Text and Programmed Text.

The main hypotheses related to research area 'Water' are as follows:-

1) There is no significant difference between the achievement score of neo-literates taught the topic 'Drinking Water' through Simple Text and Programmed Text.
2) There is no significant difference between the achievement score of neo-literates taught the topic 'Sources of Water' through Simple Text and Programmed Text.

3) There is no significant difference between the achievement score of neo-literates taught the topic 'Water and House-hold activities' through Simple Text and Programmed Text.

4) There is no significant difference between the achievement score of neo-literates taught the topic 'Proper Drainage System' through Simple Text and Programmed Text.

5) There is no significant difference between the achievement score of neo-literates taught the topic 'Hardness of Water' through Simple Text and Programmed Text.

6) There is no significant difference between the achievement score of neo-literates taught the topic 'Water Pollution' through Simple Text and Programmed Text.
7) There is no significant difference between the achievement score of neo-literates taught the topic 'Water Borne Diseases' through Simple Text and Programmed Text.

8) There is no significant difference between the achievement score of neo-literates taught the topic 'Methods of Purification of Water' through Simple Text and Programmed Text.

9) There is no significant difference between the achievement score of neo-literates taught the topic 'Storage of Water' through Simple Text and Programmed Text.

1.12 DELIMITATION OF THE STUDY:

1.12.1 CONTENT OF THE STUDY:

The term Environmental Education includes several aspects. It was very difficult to cover all the aspects so the researcher confined her study to bio-physical environment. For the solution of the topics the researcher consulted the list of topics proposed by the Directorate of Adult Education, Govt. of India in 1984 for the preparation of post-literacy material for neo-literates.

The Researcher selected 'Food' and 'Water' which is given in point No.4.2 in the list of Directorate of Adult Education New Delhi, for the preparation of post-literacy material.
Hence the study was confined to bio-physical environment which includes the following areas:

(a) Food
(b) Water

1.12.2 **SAMPLE OF THE STUDY**:

In order to evaluate the effectiveness of developed Post-literacy material a group of one hundred neo-literates was selected by Simple Random Sampling Method. 50 women and 50 men were selected for the sample. The sample was drawn from the adult education centre of Agra district where post-literacy programme was being implemented.

2.0 **DESIGN AND PROCEDURE OF THE STUDY**:

The process of development of post-literacy material of environmental education has been undertaken in two phases. The design of the study is set under the following heads:

2.1 **FIRST PHASE**:

The first phase involved:

(A) Preparation of the Programme
(B) Writing the Programme
(A) PREPARATION OF THE PROGRAMME:

It consists of following steps:

(a) Selection of research areas for the proposed post-literacy material.

(b) Identification of Objectives.

(c) Selection of Content.

(d) Defining Objectives in behavioural terms.

(e) Construct a test of Entering Behaviour.

(f) Construct a test of Terminal Behaviour.

(B) WRITING THE PROGRAMME:

The second phase involved:

(a) The Sample

(b) Tools of the Study

(c) Selection of experimental study

(d) The collection of data

(e) Scoring

(f) Statistical Procedure
FIRST PHASE:

(A) PREPARATION OF THE PROGRAMME:

(a) Selection of research areas:

The researcher selected two areas Food and Water for the preparation of post-literacy material, which is given in point No. 4.2 in the list of Directorate of Adult Education, New Delhi.

(b) Identification of Objectives:

The objectives were categorised in a hierarchial manner - knowledge, understanding, skill and application. 10 to 12 objectives were kept under each category. The total number of objectives for the research area 'Food' were forty three (43) and total number of objectives for the research area water were forty one (41).

(c) Selection of Content:

For the specification of each topic the content was arranged in Units. Nine units for the research area 'Water' and food were selected. All the units were further divided into 4 or 5 sub-units. An opportunity of open-ended item was also kept for the research area 'Food' and 'Water'.

(d) Defining objectives in behavioural terms:

'Task Description' and 'Task Analysis' were used for
writing the objectives in behavioural terms.

Task Description includes the following three ingredients:

(a) The terminal performance which the programme attempts to produce.

(b) The condition under which behaviour are to occur.

(c) Criteria of the acceptance of the student's performance.

In order to develop terminal behaviour of the learner, it is expected that learner must have mastery over the sub-tasks relevant to the terminal behaviour. The 'Task Analysis' identifies the sub-tasks which must be learnt before learning the terminal task.

(e) Construction a Test of Entering Behaviour:

In order to know the entering behaviour or level of attainment of neo-literates, the researcher prepared pre-test for both the research area 'Food' and 'Water'.

(f) Construction a Test of Terminal Behaviour:

In order to check the change of the behaviour of neo-literates, the researcher prepared post-test of each unit related to research area 'Food' and 'Water'.

(B) **WRITING THE PROGRAMME**

The researcher found that the literature available in adult education centres contained the related concepts in small quantity. Hence the researcher developed the content on 'Food' and 'Water' in Simple Text (ST) form. Keeping in the basic principles of Programming, the developed content was converted into Programmed Text (PT). The content was thoroughly analysed and divided into 'Frames' accompanied by correct and incorrect responses. A space was given with each frame for writing the correct response. To evaluate the effectiveness of the programmed text, evaluative exercises consisted of short answers type questions, matching columns and fill in the blanks were developed by the researcher for each and every unit of research area 'Food' and 'Water'.

2.2 **SECOND PHASE**

(a) **The Sample**

Purposive sampling method was used for the sample.

(b) **Tools of the Study**

The following tools and measures were utilised for the present study:

(i) Pre-tests of research area 'Food' and 'Water'.

(ii) Post-tests of each unit related to research area 'Food' and 'Water'.
(iii) Achievement score of neo-literates men and women of group A and group B in the research area 'Food' and 'Water'.

(c) **Selection of Experimental Design** :

Post-test-only Control Group Design was used for the study. A diagram of this design was as follows:

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>R</th>
<th>X1</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>R</td>
<td>X2</td>
<td>0</td>
</tr>
</tbody>
</table>

**Post-test-only Control Group Design**

The independent variables in the present study were content in the form of Simple Text (ST) and the Programmed Text (PT). The dependent variables in this study were scores on post-tests. The entering behaviour of neo-literates was treated as control variables in this study.

(d) **Collection of Data** :

The control group was taught by Simple Text (ST) using traditional method of teaching. The progress of the neo-literates for each Unit were evaluated through evaluative exercises. After it, post-test was administered on the control group.

For experimental group, the researcher gave the Programmed Text (PT) of each Unit to each neo-literate.
Neo-literates were requested to read each frame and fill in the blank space, provided with each frame. They were requested to follow the steps of programming. An evaluative exercise was also provided to neo-literates. After it, a post-test was also administered on experimental group.

(e) **Scoring:**

There were 25 items, 50 items and 100 items in different units. For the post-test containing 25 items, two marks were given to each item, one mark was given to each item in those post-tests which had 50 items, and half mark was given to each item in those post-tests which had 100 items for correct responses.

(f) **Statistical Procedure:**

Mean, S.D. and t-tests were used to analyse the data.

3.0 **FINDINGS OF THE STUDY:**

The findings of each unit related to research area 'Food' and 'Water' were as follows:
1. When neo-literate men of group A were compared with neo-literate men of group B, the mean of the group B was found greater than the group A for each unit of both the research areas 'Food' and 'Water'. It showed that they learnt more when were taught through Programmed Text.

2. When neo-literate women of group A were compared with neo-literate men of group B, mean achievement score of neo-literate women of unit 1 of research area 'Food' was found greater than mean achievement score of neo-literate men of unit 1 of the same research area.

The means of the achievement scores of neo-literate men of group B of units 2, to 9 of research area 'Food' were found greater than mean achievement score of neo-literate women of group A.

The mean achievement scores of neo-literate men of group B was also found greater than the neo-literate women of group A for the units 1, to 9 of the research area 'Water'.

The mean achievement scores of neo-literate men of group B was also found greater than the neo-literate women of group A for the units 1, to 9 of the research area 'Water'.
3. When neo-literate men of group A were compared with neo-literate women of group B, the means of achievement scores of neo-literate women of group B was found greater than the neo-literate men of group A. This result was obtained from all the units of research areas 'Food' and 'Water'.

4. When neo-literate men of group A was compared with neo-literate women of the same group, keeping Simple Text as a constant variable. In this case, on one side the mean of the achievement scores of neo-literate men was found greater than the mean achievement scores of the neo-literate women of the same group for unit Nos. 3, 6, 7, 9, of research area 'Food' and Unit Nos. 4, 5, 8, 9, of research area 'Water'. On the other side, the mean of the achievement scores of unit Nos. 1, 2, 4, 5, 8, of research area 'Food' and Unit Nos. 1, 2, 3, 6, 7, of research area 'Water' were found greater for neo-literate women than the mean achievement scores of neo-literate men.

5. When group B was compared gender wise, keeping programmed text as a constant variables the mean achievement scores of unit Nos. 1, 2, 3, 4, of research area 'Food' and Unit Nos. 3, 9, of research
area 'Water' were found greater for neo-literate women of group B than the mean achievement scores of neo-literate men of the group B.

For other Units i.e. for Unit Nos. 5,6,7,8,9, of research area 'Food' and for Unit Nos. 1,2,4,5,6,7,8, of research area 'Water', the results were in favour of neo-literate men of group B, as their mean of the achievement scores were found greater than the mean of achievement scores of neo-literate women of group B.

6. When neo-literate women of group A were compared with neo-literate men of group B, the mean of the achievement scores of women of group B was found greater than neo-literate women of group A for all the units of both the research areas 'Food' and 'Water'.

7. When neo-literate men of group A were compared with neo-literate men of group B, the mean of the achievement scores of neo-literate men of group B was found greater than neo-literate men of group A. This result was found for all the Units of both the research areas 'Food' and 'Water'.

The findings of the study clearly showed that learning through Programmed Text yielded effective results but it required practice.