CHAPTER IV

INSTRUCTIONAL MATERIAL

4.0 INTRODUCTION

4.1 PREPARATION OF INSTRUCTIONAL MATERIAL

4.2 COMPONENTS OF INSTRUCTIONAL MATERIAL

4.2.1 Slides

4.2.2 Charts

4.2.3 Audio Cassette

4.2.4 Adjunct Programme
   on
   Population Education

4.3 TRYOUT OF INSTRUCTIONAL MATERIAL
   (ADJUNCT PROGRAMME)
4.0 INTRODUCTION

It has been mentioned earlier that one of the chief objectives of the present investigation is to prepare an Instructional Material on Population Education, with a view to studying its impact on development of attitude among primary student-teachers towards population education. Therefore, it was necessary to prepare an Instructional material on population education. Generally, the instructional material is in the form of textbooks, handbooks, supplementary reading materials, audio-visual aids, film, filmstrips and so on. For developing this, special panels have been established representing different fields and different competencies. The preparation of right type of instructional materials is crucial to the whole investigation and present 'population-explosion' situation in India. It involves the process which seeks to translate the difficult concepts and present them in the form suited to the maturity level of the students at different stages.
In order to inculcate attitudes, the instructional material should be such that it should make aware the student-teachers about the problems created by increasing growth rate of population.

Therefore, the first and foremost task before the investigator, was to select the aspects of population education in which the instructional material could be prepared. In order to select the media of presenting the instructional material on population education, the investigator met the experts in this field and discussed with them to decide the media through which the instructional material could be presented. The following media were suggested.

(i) Slides and charts - Visual media,
(ii) Conversation cassette - Audio media
(iii) Adjunct programme - Visual (Reading) media

4.1 PREPARATION OF INSTRUCTIONAL MATERIAL

For achieving main objective of the present investigation, it was necessary to prepare instructional material on population education. The investigator reviewed books and journals on population education, research articles on population education, past studies done in this area and other literature. The researcher, after reviewing the
literature and discussion with experts as well as with the guide, decided to prepare instructional material having the following components.

(i) 80 slides and 24 charts - Visual media
(ii) Talks by experts - Audio media
(iii) Adjunct Programme - Visual (Reading) media

4.2 COMPONENTS OF INSTRUCTIONAL MATERIAL

The instructional material used in the present study includes slide, charts, audio cassette and adjunct programme. The detail of each component is presented as under.

4.2.1 Slides

80 slides were prepared by The State Institute of Education, Ahmedabad on different aspect of population education. The main aspects covered by the slides are as:

(i) Comparison of Atom bomb explosion with population explosion.
(ii) A picture of present position of India & World.
(iii) Meaning of population education.
(iv) Bad effects of population explosion.
(v) Awareness of this burning problem of over population among the students.
(vi) The factors effecting the growth rate of Population.
(vii) Death rate and birth rate.
(viii) The need of controlling the population growth.
(ix) The size of family in developed & developing countries and factors affecting it.
(x) Population explosion and its bad effects on housing, transport, food, environment, pollution, employment, etc.
(xi) Description about the small family is a happy family.
(xii) Density of population and its bad effects on land, transport and other amenities.
(xiii) Demerits of over population.
(xiv) Distribution of population structure.
(xv) Measures for controlling population growth rate.
(xvi) Remedy for controlling population explosion.

4.2.2 Charts

24 charts on population education prepared by the State Institute of Education, Raikhad, Ahmedabad are used as one of the components of instructional material. The charts are prepared in such a way that students can read and see the pictures regarding different aspects of population education. The charts were useful for the organization of exhibition on population education. The charts covers the following aspects of population education.
(i) Understanding of population education.
(ii) Population explosion.
(iii) The factors affecting population growth.
(iv) The bad effects of population growth on education, food, hygiene, nutrition, employment, housing, pollution, environment.
(v) The effects of population explosion on social development.
(vi) Demerits of unplanned family and their problems.
(vii) Population of Gujarat and other states of India according to Census, 1981.
(viii) Population situation—attitude and responsibility.
(ix) The birth rate and death rate.
(x) The factors affecting population increase and density of population.

The charts are useful for imparting knowledge about population education and its effects. With the help of charts the awareness of the bad effects of population explosion could be brought to the mind of the students. Two or three questions are framed on each chart. (Please see appendix -H). The students were requested to see the exhibition of charts and answer the questions. The questions were just put to check the carefulness of the students with which they observe the charts.

4.2.3 Audio Cassette

Audio cassette was one of the components of instruc-
tional material. It was prepared by present investigator after discussion with the experts and with the help of the guide. The following contents were decided for preparing the audio cassette.

(i) Population Explosion
(ii) Effects of population explosion
(iii) Measures for controlling population growth rate.

The researcher has taken a special help of Minaxi Shelat and Upendra Pathak for the script writing for preparing audio cassette. The script was prepared in the form of conversation so as to maintain the interest of the listeners. The language of the script for preparing audio cassette was Gujarati because the experiment was to be carried out on student-teachers having Gujarati as the mother tongue.

After preparing the script on the three aspects of population education, it was decided to record it with the help of experts. For this, two experts were fixed up for recording the conversation. Thus the audio cassette was prepared which is one of the present media through which the instructional material was to be the script of the conversation for audio cassette. (Please see appendix-F).
ADJUNCT PROGRAMME ON POPULATION EDUCATION

Adjunct programme on population education is one of the important components of instructional materials. The researcher has accepted the meaning of the adjunct programme described in the book: *Aspects of Educational Technology*. It is as under:

Essence of this technique consists of breaking down subject materials into small chunks of information to which the student is caused to respond in an overt manner.

They are of the opinion that it is a very reasonable way of making students learn effectively. The adjunct programme was prepared in the consultation of the guide as well as some experts. Adjunct programme is such a programme in which the certain content matter is given and below it, some questions regarding the contents are given. The adjunct programme on population education is a kind of reading material for primary teacher-trainees in Gujarati language. It is prepared in a form of booklet. The questions are in a form of objective type such as multiple choice, filling the gaps, matching test, true-false etc. Most of the questions are framed in the form of statements.

1. *Aspects of Educational Technology*. Methuen & CO. Ltd., 11, New Feffer Lane, London. P. 206
Three or four alternatives are given in which one is the correct response. The students are requested to read the content and answer the questions below by putting a tick mark (✓) in front of correct answer. It is called as panel. The primary teacher-trainees were instructed to read the panel and to tick mark the correct answer.

The adjunct programme on population education included the following content points. The contents were divided into thirty panels. There were three or four different type of objective questions below the content paragraph. One hundred twenty eight questions were constructed in this programme. At the end a criterian test is given. Though the scores of the criterian test are not considered in the experiment. But it was to know whether the student has learnt it in a better and effective way. The panels were made on the different content points which are as under:

(i) Comparison of the population of different countries.
(ii) Picture of population of India from A.D. 1901 to 1981.
(iii) Population growth rate and factors affecting it.
(iv) Density of population and problems created by it.
(v) Effects of over population on unemployment, standard of living, per-capita income and poverty.
(vi) A comparison between death rate and birth rate.
(vii) Fertility and factors related to more fertility.
Mortality rate and social welfare.

The adjunct programme is prepared keeping in view the points just described. Thirty five panels were framed initially. On each of the panels there are two or three questions given below the material. The student-teachers had to read each panel and answer the questions. The responses were to be recorded by putting a tick mark ( / ) against the preferred choice.

On the first page instructions are given about how to use this material and how the answers are to be given. In the programme the right answers are given on the right hand side. But while reading the panel, the candidate has to cover the correct answer by a piece of paper. First the trainee or the student-teacher has to give or to make tick mark the answer and then he can check whether his/her answer is correct. If the answer is wrong, he/she has to read again that panel and he/she has to attempt again to find out the correct answer. After finding out the correct answer he or she has to go ahead. The example is also given on the first page. Thus they were suggested for using Adjunct Programme on population education.

On completion of thirty panels having 128 questions, a criteria test was given to students at the end. Thus the Adjunct programme on population education was prepared and tried out on a small sample. It is given in Appendix E.
4.3 TRYOUT OF THE ADJUNCT PROGRAMME

The prepared adjunct programme on population education was administered to five student-teachers individually. They were requested to read these panel one by one and answer the questions given below each panel. Initially the investigator has prepared 35 panels having 142 questions. The programme was administered to five student-teachers individually and twenty five student-teachers collectively. On intensive observations of the student-teachers it was found that a few panels raised some serious problems for them to understand. Such panels were totally dropped. Some were restructured and thus the final form was prepared.

Table 4.1 presents the number of original, revised and rejected panels.

<table>
<thead>
<tr>
<th>ORIGINAL PANEL</th>
<th>REVISED PANEL</th>
<th>REJECTED PANEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>30</td>
<td>4</td>
</tr>
</tbody>
</table>

The following number of panels were rejected.

Panel No. 7, 11, 19, 26.

For example,

Panel No. 7 was as under:
TABLE SHOWING PER CAPITA INCOME OF DIFFERENT COUNTRIES

<table>
<thead>
<tr>
<th>Name of the Country</th>
<th>Per Capita Income according 1981 in U.S. Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>260</td>
</tr>
<tr>
<td>China</td>
<td>300</td>
</tr>
<tr>
<td>Pakistan</td>
<td>350</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>140</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>10630</td>
</tr>
<tr>
<td>Japan</td>
<td>8810</td>
</tr>
<tr>
<td>U.K.</td>
<td>6320</td>
</tr>
<tr>
<td>Canada</td>
<td>9640</td>
</tr>
</tbody>
</table>

Answer the following questions on the basis of the above information.

(35) Which country is the first in the per-capita income?

(a) China
(b) Canada
(c) U.S.A. **Ans. 35(c)**

(36) How much dollar per-capita income of India is less than Canada?

(a) 9830
(b) 9380
(c) 9640 **Ans. 36(b)**

(37) Which country has the lowest per-Capita income in the world?
(38) What could you say about India in comparison to other countries in the world? Ans.38 POOR

Panel - 19

There should be an increase in national income alongwith per-capita income with a view to abolishing poverty. The increase in per-capita income depends upon economic development. For the economic development, it is necessary to increase production and it should increase every year. In order to maintain the present living standard of the population, it is called demographic investments. While the investments which is done for increasing national income and for increasing per-capita income is called economics investments. Due to more demographic investments, the economics investments cannot be increased. Therefore, the development cannot be achieved.

(88) The increase in per-capita income depends upon ------ developments.

(a) economic
(b) Political
(c) Social

Ans.88(a)

(89) Put a tick mark against true statement.
Investments for maintaining the standard of living is called economic development.

The investments for maintaining present standard of living is called demographic investments.

(a) Effort that decrease in per-capita income.
(b) increasing national income.
(c) investments for increasing per-capita income.

Thus, for the achievement in economic development-should be controlled.

These four panels were rejected because the other two panels were repetition. Panel No. 19 was too difficult to understand by the student-teachers of primary colleges because the terminology of economics are used. And it is therefore difficult to understand by the S.S.C. level students. Panel No. 26 presents the death rate of different states. It is easy in understanding but it is in detail and duplicates the content. Therefore these four panels were rejected. Most of the panels were revised.
and they were framed in a simple and easy language. 90 percent of the student-teachers could answer the panels in one hour. Thus thirty panels were selected for the final version of the adjunct programme on population education.

Table 4.2 presents the number of questions which were originally prepared, retained and rejected.

**TABLE 4.2**

NUMBER OF ORIGINAL, REVISED AND REJECTED QUESTIONS

<table>
<thead>
<tr>
<th>Original questions</th>
<th>Questions retained</th>
<th>Rejected questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>151</td>
<td>128</td>
<td>25</td>
</tr>
</tbody>
</table>

The following question numbers below each panels were rejected.

14, 17, 23, 33, 35, 36, 37, 38, 42, 46, 54, 55, 56, 57, 71, 88, 89, 90, 91, 100, 114, 118, 119, 120, 121.

The question No. 14 on panel three was rejected, the question is:

(14) What will be the estimated population of India in 1991?

(a) 95 crore
(b) 88 crore
(c) 100 crore

ans. 14 (b)
The answer of this question was not given in the panel or in the content of the panel. 95 percent of the students could not answer this question, hence rejected.

The question no. 71 on panel 15 is as under:

(71) For improving the living standard of people, the ________ income be increased.

   (a) national
   (b) per-capita
   (c) joint

   ans. 71 (b)

This question is the repetition of question No. 70, hence it was rejected.

The question No. 114 on panel 25 which reads as under:

(114) Higher birth rate is the cause of over population because -

   (a) more child borns
   (b) number of death is less
   (c) age of marriage is lower

   ans. 114 (a)

This question was not properly worded because not only the higher birth rate causes the over population. But the difference between birthrate and death rate causes the over population. Eighty percent of the students could not answer it. Therefore it was rejected. Thus, the question
There was also a criterian test at the end of this adjunct programme on population education. The score of the test was not considered in the experiment. But the importance of the criterian test was to make the learning process more effective.

Thus, the final form of the adjunct programme on population education was framed and got printed. (Please see appendix- G).