CHAPTER 6

DEVELOPMENT OF COMPUTER PROGRAMME

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6.1 INTRODUCTION

To develop the item-bank is important, but to its application is having more importance. For the application of computerised item-bank the computer programme is developed by the investigator. Here, the detail of computerised item-bank is given.

6.2 Useful Computer Programmes for Item-bank

The list of useful computer programmes developed by various agencies for item-bank is given here.

1. A computer-training programme for academic and administrative staff of higher education was conducted before six years by taking the financial assistance from UGC by Computer Centre, Bhavnagar University. Each participatory institute was provided with computer programme - MISS (management Information System Series). This programme includes different nine programmes. First of them is CUTE (Computer Utility for Testing & Evaluation). With this, constructed item-bank can be made computerised.

2. Education Department, Devi Ahalyabai University, Indore has developed the computer programme by using d-base package to computerised the constructed item-bank. Item-bank is necessarily in English language.

3. Dhankot (1998), Education Department, Saurashtra University, Rajkot has developed the computer programme in FOXPRO for construction and use of computerised item-bank. This programme is useful for the items in Gujarati language.
4. Prof. Zaveri, former head of computer centre of Bhavnagar University has developed the computer programme for the preparation of test papers from the item-bank.

5. QB2000: computer programme has been developed by the Education Department, Bhavnagar University.

6. Various programmes useful for computersied item-bank are also available in the professional market.

6.3 IB2002: COMPUTER PROGRAMME

Investigator has developed the Computer Programme IB2002 in Gujarati language for class seven science for the application of item-bank. This programme will be useful for test conduction, acquisition and scoring.

Guideline regarding the computer programme IB2002 by using the computersied item-bank which is developed in Gujarati language for class seven Science for preparing the test papers, test conduction, acquisition of item wise scoring of the answers and total scores.

6.3.1 Purpose of Guideline

1. To give the introduction of IB2002.
2. To give the operation of IB2002.

6.3.2 Required Hardware and Software

For the use of IB2002, hardware and software listed below are required.
1. Hardware : Pentium Personal Computer
2. Operating System ; Windows 95 or version after that
3. Package: FOXPRO 2.6 - window version
4. Font: Gujarati - Tera font - Varun
5. Database: Computersied item bank of Class Seven Science

6.3.3 General Information regarding the Computer Programme

Name of the Programme: IB2002
Language: FOXPRO 2.6 for WINDOWS
Year: 2002
Application: For evaluation of students by giving the test with the help of computerised item bank.

1. By using this computer programme, computersied assisted test can be given to the students.

2. Immediate scoring of the answer given by the students for each question can be acquired.

3. Total scoring of the answers given by the students for the total no. of questions will be acquired after each section.

4 COMPUTERISED ITEM-BANK

6.4.1 Introduction of Computerised Item-bank

Class: Seven
Subject: Science
Language: Gujarati

Type of Questions:
1. Multiple choice type (no. of alternatives: 3)
2. True-False type (no. of alternatives: 2)
3. Match the following type
4. Fill the gaps type (no. of alternatives: 3)
5. Answer in one word or integer (no. of alternatives : 3)

Total no. of questions:
1. Multiple choice type : 482
2. True-False type : 167
3. Match the following type : 22
4. Fill the gaps type : 223
5. Answer in one word or integer : 243
Total : 1137

Meaning of words in regard to Computer and Item-bank:

<table>
<thead>
<tr>
<th>Regard to Computer</th>
<th>Regard to Item-bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATA BASE</td>
<td>Item-bank</td>
</tr>
<tr>
<td>FILE</td>
<td>Item-bank</td>
</tr>
<tr>
<td>RECORD</td>
<td>Item</td>
</tr>
<tr>
<td>FIELD</td>
<td>Item characteristics</td>
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</table>

RECORD and its' FIE

1. Compet.dbf

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Width</th>
<th>Detail</th>
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<td>Lacode</td>
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<td>2</td>
<td>For enter the learning area</td>
</tr>
<tr>
<td>Cocode</td>
<td>N</td>
<td>2</td>
<td>For enter the competency code</td>
</tr>
<tr>
<td>Codiscription</td>
<td>Memo</td>
<td>10</td>
<td>For enter the competency number</td>
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</table>

2. Question.dbf

<table>
<thead>
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<th>Field</th>
<th>Type</th>
<th>Width</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
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<td>For enter the learning area</td>
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<tr>
<td>Cocode</td>
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<td>2</td>
<td>For enter the competency code</td>
</tr>
<tr>
<td>Qtype</td>
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<td>For the selection of the question type</td>
</tr>
<tr>
<td>Question</td>
<td>Memo</td>
<td>10</td>
<td>For entering the question</td>
</tr>
<tr>
<td>Option</td>
<td>Memo</td>
<td>10</td>
<td>For entering the alternatives</td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td>----</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>FIGNO</td>
<td>N</td>
<td>2</td>
<td>For entering the figure</td>
</tr>
<tr>
<td>ANS</td>
<td>N</td>
<td>1</td>
<td>For the selection of the correct answer</td>
</tr>
<tr>
<td>QSEL</td>
<td>Logical</td>
<td>1</td>
<td>For the selection of the question</td>
</tr>
</tbody>
</table>

**Files or the name of the Item-banks**

Compet.dbf is and Question.dbf are the main data files of the programme, in which competency numbers and the various types of the items have been put / stored respectively.

6.4.2 **Operating of the Programme**

**Required Skills for Programme Operation**

1. Able to operate WINDOWS – 95
   (i) can open WINDOWS
   (ii) can start the package in WINDOWS (e.g.FOXPRO)
   (iii) can shut down the WINDOWS

2. Able to start FOXPRO
   (i) through shortcut icon or
   (ii) through Start / Program / Foxpro or
   (iii) through Start / Find / Foxpro or
   (iv) any other way

3. Able to start the programme : IB2002
   (i) Program / DO / IB2002 / DO or
   (ii) with the command IB2002
6.4.3 Input, Output and Process of the programme

Below given Table No. 6.1 describes the Input, Output and Process of the programme, which will be useful to understand the programme.

**TABLE 6.1**

**INPUT, OUTPUT AND PROCESS OF THE PROGRAMME**

<table>
<thead>
<tr>
<th>No.</th>
<th>Step</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the beginning the general information about the programme will be shown.</td>
<td>Information</td>
</tr>
<tr>
<td>2</td>
<td>On selection of the learning area, competency no. and question type, the data file which is to be used can be known.</td>
<td>Input</td>
</tr>
<tr>
<td>3</td>
<td>How many questions are to be selected? e.g. 10 out of 15</td>
<td>Input</td>
</tr>
<tr>
<td>4</td>
<td>Computer programme will randomly select 10 questions</td>
<td>Process</td>
</tr>
<tr>
<td>5</td>
<td>Selected questions will be displayed one by one on the monitor</td>
<td>Output</td>
</tr>
<tr>
<td>6</td>
<td>How to give the answer will be instructed. All the instructions are in Gujarati language.</td>
<td>Instruction</td>
</tr>
<tr>
<td>7</td>
<td>Answer from the student will be accepted.</td>
<td>Input</td>
</tr>
<tr>
<td>8</td>
<td>Correct or incorrect answer will be decided</td>
<td>Process</td>
</tr>
<tr>
<td>9</td>
<td>Information about the correct or incorrect answer will be given</td>
<td>Output</td>
</tr>
<tr>
<td>10</td>
<td>After the completion of display of each question, total score will be shown.</td>
<td>Output</td>
</tr>
</tbody>
</table>
6.4.4. Description of the Operating Process of the Computer Programme IB2002

1. Start the Computer / WINDOWS95
2. Start FOXPRO
   PROGRM / DO / IB2002 / DO
4. In the beginning, the following window will occur on the screen. Read it carefully.

5. On pressing the Enter key, another window will be on the screen.
6. By using the Arrow key, select the Learning Area and then press the Enter key.
7. By using the Arrow key, select the Competency number and then press the Enter key.
8. By using the Arrow key, select the type of the question and then press the Enter key.
9. Select the proper number of questions from the item-bank.
10. Computer will randomly select the questions and display one by one on the monitor. By using the Arrow key, student has to select the alternative and press the Enter key.
11. Scoring of the answers given by the students will be done by the computer. If the answer given by the student and entered in the answer field of the question will be same, then computer will respond – your answer is correct, otherwise it will responding – your answer is incorrect.
12. After completing the all questions, total score will be given by the computer.
13. On pressing the Enter key, work will be finished.
6.5 LIMITATIONS OF THE PROGRAMME

Limitations of the computer programme are listed below.

1. The programme is limited to class seven sciences only.

2. The programme developed under the study is related with Research and Development cycle and having various scopes for improvements. So, Executable file for the programme is not made and to run the programme FOXPRO (w) is required.

3. Memo field is used for the questions and alternatives. So, one type of font can be used. For Gujarati language, Tera font Varun and for English language, Times New Roman is used.

6.6 PROBLEM SOLUTION

Instructions to solve the problems occurred at the time of programme operation are given below.

1. Check the availability of the required hardware / software. (e.g. package, font, programme etc.)

2. Check the availability of the data file / item- bank on the floppy disk or hard disk.

3. Having the required skills to run the programme is essential. Otherwise, acquired the guidance from the experienced person or the computer operator.

6.7 TWO - WAY DEVELOPMENTAL APPROACH

Proposed computer programme is developed by keeping in view the objectives of the study, within the limited time-period and capacity of the investigator. Improvements, reformations and additions in the programme for its wide application are desirable. To make free teachers from the mechanical work of examination and make students eager to drill and revised their content for conceptual clarity are the hidden aims of the study.