## CONTENTS

<table>
<thead>
<tr>
<th>S.NO</th>
<th>INDEX</th>
<th>PAGE NO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>List of Tables</td>
<td>x - xiii</td>
</tr>
<tr>
<td></td>
<td>List of Figures</td>
<td>xiv</td>
</tr>
<tr>
<td></td>
<td><strong>CHAPTER — I INTRODUCTION</strong></td>
<td>1 – 40</td>
</tr>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Education</td>
<td>1</td>
</tr>
<tr>
<td>1.3</td>
<td>Educational Technology</td>
<td>2</td>
</tr>
<tr>
<td>1.3.1</td>
<td>Concepts of Educational Technology</td>
<td>3</td>
</tr>
<tr>
<td>1.4</td>
<td>Technology in Education</td>
<td>3</td>
</tr>
<tr>
<td>1.5</td>
<td>Technology of Education</td>
<td>3</td>
</tr>
<tr>
<td>1.6</td>
<td>The Role of Technology in learning</td>
<td>4</td>
</tr>
<tr>
<td>1.7</td>
<td>Self Paced Learning Instruction</td>
<td>6</td>
</tr>
<tr>
<td>1.7.1</td>
<td>Programmed Learning Instruction</td>
<td>6</td>
</tr>
<tr>
<td>1.7.2</td>
<td>Computer Assisted Instruction</td>
<td>8</td>
</tr>
<tr>
<td>1.7.3</td>
<td>Multimedia</td>
<td>11</td>
</tr>
<tr>
<td>1.7.3.1</td>
<td>Electronic Media</td>
<td>12</td>
</tr>
<tr>
<td>1.7.3.2</td>
<td>The Role of Multimedia in Education</td>
<td>13</td>
</tr>
<tr>
<td>1.7.3.3</td>
<td>Multimedia Environment in Learning</td>
<td>14</td>
</tr>
<tr>
<td>1.7.3.4</td>
<td>Importance of Multimedia Education</td>
<td>15</td>
</tr>
<tr>
<td>1.7.3.5</td>
<td>Structure of Multimedia and its types</td>
<td>17</td>
</tr>
<tr>
<td>1.7.3.6</td>
<td>Elements of Multimedia</td>
<td>19</td>
</tr>
<tr>
<td>1.8</td>
<td>Effectiveness of Multimedia Education</td>
<td>21</td>
</tr>
<tr>
<td>1.9</td>
<td>Need of Science Education</td>
<td>23</td>
</tr>
<tr>
<td>1.10</td>
<td>The place of Botany in life</td>
<td>25</td>
</tr>
</tbody>
</table>
1.11 Importance of teaching and learning Botany in class rooms 26
1.12 Statement of the problem 28
1.13 Need for the study 28
1.14 Scope of the study 32
1.15 Significance of the study 35
1.16 Rationale for the selection of the area 37
1.17 Objectives of the study 39
1.18 Chapterisation 40

CHAPTER – II REVIEW OF LITERATURE 41 – 79

2.1 Chapter Preview 41
2.2 Studies in India 42
2.2.1 Studies related to Programming Learning Method 42
2.2.2 Studies related to Computer Assisted Instruction 45
2.2.3 Studies related to Multimedia 49
2.3 Studies Abroad 54
2.3.1 Studies related to Programming Learning Method 54
2.3.2 Studies related to Computer Assisted Instruction 56
2.3.3 Studies related to Multimedia 63
2.4 Over view of the related studies 76
2.5 Review of inferences 78

CHAPTER – III PLAN AND PROCEDURE 80 – 130

3.1 Introduction 80
3.2 Statement of the problem 80
3.3 Experimental research 82
3.4 Research design 83
3.13.4 Validation of CAI package 104
3.14 Application of multimedia package 104
3.14.1 Interactive Multimedia learning package 105
3.14.2 Structure of multimedia package 105
3.14.2.1 Structure of Volume I 106
3.14.2.2 Structure of Volume II 108
3.14.2.3 Structure of Volume III 111
3.14.3 System requirements for multimedia package 116
3.14.4 Main components of the multimedia package 116
3.14.5 Details of the folder multimedia package 117
3.14.6 Validation of multimedia package 117
3.15 Construction of tools 118
3.15.1 Multimedia opinion schedule for teachers 118
3.15.1.1 Pilot Study 119
3.15.1.2 Difficulty Level and Discriminative Index 119
3.15.1.3 Reliability of the MMOS 121
3.15.1.4 Validity of the MMOS 123
3.15.2 Achievement test for the students 123
3.15.2.1 Validity of the achievement test 124
3.15.2.2 Reliability of the Achievement test 124
3.16 Sampling 127
3.16.1 Purposive Sampling 127
3.16.2 Sample for the study 128
3.17 Data Collection by administering the achievement test 130
3.18 Statistical techniques used in the study 130
# Chapter IV: Analysis and Findings

4.1 Scheme of Analysis  
4.1.1 Statement of the problem  
4.1.2 Objectives of the study  
4.1.3 Hypotheses of the study  
4.2 Descriptive Analysis  
4.3 Differential Analysis  
4.4 Results of the study

# Chapter V: Summary and Conclusion

5.1 Introduction  
5.2 Objectives of the study  
5.3 Sample of the study  
5.4 Instrumentation  
5.5 Experimentation  
5.6 Data analysis  
5.7 Major findings of the study  
5.8 Educational Implications  
5.9 Suggestions for further Research  
References i – xxvi  
Appendices xxvii - lii