Intelligent Multimedia Help System for Arithmetic
(ARITHELP)

By
NOOR LEES ISMAIL

A dissertation submitted in partial fulfillment of the requirements for the degree
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DECLARATION

I certify that this dissertation submitted for the degree of Masters is the result of my own research, except where otherwise acknowledged and that this dissertation (or any part of the same) has not been submitted for higher degree to any other university or institution.

Signed: Noor Lees Ismail
Date: 20.6.2000
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Wassalam.
ABSTRACT

This dissertation studies and implements an Intelligent Multimedia Help System for Arithmetic (ARITHELP). The major problem currently faced by the manual references is time constraint. Therefore, the goal of this thesis is to provide a quick and easy help for students using multimedia concepts. This system can be categorized into an expert system type as it transforms an expert knowledge into the system. It consists of 4 components which are an expert model, tutor model, student model and interface model. Overlay model is used as a technique to represent knowledge in student model whereas the pedagogical model is used to model a pedagogical knowledge that show steps in teaching and helping for the system. Several examples of intelligent system such as Intelligent Web-Based Help Desk System, ISIS Tutor and Case-Based Mode Management Tutor are reviewed. This thesis also reviewed on technology in education, student modeling architecture, on-line learning and reasoning techniques. The system is developed using a rule-based reasoning as a method to represent knowledge. The design phase involves the process of designing the ARITHELP interface including screen interface, navigational tools, interaction styles, required device and feedback format. The development process of the ARITHELP is done using two software application: ToolBook II Instructor and Paintbrush. The major application is done using ToolBook II Instructor whereas paintbrush is used to modify the graphic and picture image before inserting it into the system. The system is implemented as a standalone system and CD-ROM based.
# TABLE OF CONTENTS

**DECLARATION**

**ACKNOWLEDGEMENTS**

**ABSTRACT**

**TABLE OF CONTENTS**

**LIST OF FIGURES**

<table>
<thead>
<tr>
<th>CHAPTER 1 : INTRODUCTION</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Problem Description</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Intelligent Multimedia Help System for Arithmetic (ARITHHELP)</td>
<td>4</td>
</tr>
<tr>
<td>1.2.1 Main Modules</td>
<td>5</td>
</tr>
<tr>
<td>1.2.1.1 The Learning Module</td>
<td>6</td>
</tr>
<tr>
<td>1.2.1.2 The Practice Module</td>
<td>6</td>
</tr>
<tr>
<td>1.2.1.3 The Help Module</td>
<td>6</td>
</tr>
<tr>
<td>1.2.2 Sub Modules</td>
<td>7</td>
</tr>
<tr>
<td>1.2.2.1 Beginner</td>
<td>7</td>
</tr>
<tr>
<td>1.2.2.2 Intermediate</td>
<td>7</td>
</tr>
<tr>
<td>1.3 Thesis Scope</td>
<td>7</td>
</tr>
<tr>
<td>1.3.1 Definition of Arithmetic</td>
<td>7</td>
</tr>
<tr>
<td>1.3.2 The Four Rules of Arithmetic</td>
<td>8</td>
</tr>
<tr>
<td>1.4 Thesis Objectives</td>
<td>9</td>
</tr>
<tr>
<td>1.5 Thesis Organization</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 2 : USING MULTIMEDIA IN EDUCATION</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Multimedia</td>
<td>11</td>
</tr>
<tr>
<td>2.2 Interactive Multimedia</td>
<td>12</td>
</tr>
<tr>
<td>2.2.1 Examples of Interactive Multimedia</td>
<td>13</td>
</tr>
<tr>
<td>2.2.1.1 Information Kiosk</td>
<td>13</td>
</tr>
<tr>
<td>2.2.1.2 Interactive Video</td>
<td>13</td>
</tr>
<tr>
<td>2.3 Hypermedia</td>
<td>13</td>
</tr>
<tr>
<td>2.4 Hypertext</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER 3 : LITERATURE REVIEW</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 A Review of Intelligent System</td>
<td>17</td>
</tr>
<tr>
<td>3.1.1 ISIS Tutor : An Intelligent Learning Environment (ILE) for CDS/ISIS Users</td>
<td>17</td>
</tr>
<tr>
<td>3.1.2 Intelligent Web-Based Help Desk System</td>
<td>19</td>
</tr>
<tr>
<td>3.1.3 Cased-Based Mode Management Tutor (CB-MMT)</td>
<td>21</td>
</tr>
<tr>
<td>3.2 Technology Education</td>
<td>22</td>
</tr>
<tr>
<td>3.3 Student Modeling Architecture</td>
<td>23</td>
</tr>
<tr>
<td>3.3.1 Differential Modeling</td>
<td>23</td>
</tr>
<tr>
<td>3.3.2 Perturbation Modeling</td>
<td>24</td>
</tr>
<tr>
<td>3.4 Reasoning Method</td>
<td>25</td>
</tr>
<tr>
<td>3.4.1 Rule-based Reasoning</td>
<td>25</td>
</tr>
</tbody>
</table>
6.6.2 Navigational Aids 64
   6.6.2.1 Backtracking 64
   6.6.2.2 Sneak Preview 64
6.7 ARITHHELP Feedback Format 65
   6.7.1 Help 65
      6.7.1.1 Tag Tips 65
   6.7.2 Assistance Format 66
   6.7.3 Empowering Format 66
   6.7.4 Modeling 67
   6.7.5 Coaching 67
   6.7.6 Tutoring 67
      6.7.6.1 Expository Tutor 67
      6.7.6.2 Procedure Tutor 67
6.8 Devices 68

CHAPTER 7 : SYSTEM IMPLEMENTATION AND TESTING 69
7.1 ARITHHELP Features 69
7.2 ARITHHELP Structure 69
   7.2.1 Knowledge Base 70
   7.2.2 Working Memory 70
   7.2.3 Inference Engine 70
   7.2.4 Explanation Facility 70
   7.2.5 User Interface 71
7.3 ARITHHELP Architecture 71
7.4 Tools for Implementing ARITHHELP 73
   7.4.1 ToolBook II Instructor 74
   7.4.2 PaintBrush 74
7.5 System Testing 75
   7.5.1 Unit Testing 75
   7.5.2 Integration Testing 75
   7.5.3 System Testing 75

CHAPTER 8 : CONCLUSION 76
8.1 Problem and Solution 76
   8.1.1 Difficulty in choosing a Software 76
   8.1.2 Problems and solution during system implementation 76
8.2 System Strengths 77
   8.2.1 Detailed Feedback 77
   8.2.2 User Friendly 77
   8.2.3 Fast Response 77
8.3 System Limitations 77
   8.3.1 System Performance depend on the CPU speed 77
   8.3.2 Software Limitation 78
   8.3.3 Cost of multimedia hardware and Software 78
8.4 Future Enhancements 79
   8.4.1 Implement over the Internet 79
   8.4.2 Input Systems 79
   8.4.3 Collaborative Helping 79
   8.4.4 Improved interfaces, bandwidth and visual representation 79
8.5 Conclusion 80
LIST OF FIGURES

Figure 1.1: Human Problem Solving
Figure 2.1: Nodes and Links
Figure 3.1: Design of the Case-Based Mode Management Tutor
Figure 3.2: A Representation of a Differential Student Model
Figure 3.3: A Representation of the Perturbation or Buggy Student Model
Figure 3.4: Architecture of a Rule-Based System
Figure 3.5: The CBR Cycle
Figure 4.1: The Contexts of an ARITHELP
Figure 5.1: The Student Model in ARITHELP
Figure 5.2: A Representation of an Overlay Model Showing the Effects of Tutoring
Figure 6.1: Dialogue Diagram of ARITHELP
Figure 6.2: The Main Screen
Figure 6.3: An Example of a Sub Screen
Figure 6.4: An Example of Dialogue Screen
Figure 6.5: The Main Page
Figure 6.6: The Beginner’s Learn Page Screen
Figure 6.7: The Beginner’s Practice Page Screen
Figure 6.8: The Help Index Page Screen
Figure 6.9: An Example of a Drop-Down Menu
Figure 6.10: The Help Index Screen
Figure 6.11: The Intermediate Learn Screen
Figure 6.12: The Search Icon Tag
Figure 7.1: ARITHELP Problem Solving
Figure 7.2: ARITHELP Architecture