HIGHER TECHNICAL INSTITUTE

COMPUTER STUDIES DEPARTMENT

DIPLOMA PROJECT

A MULTIMEDIA BASED SYSTEM FOR CHILDREN WITH DYSLEXIA

CS/274

PANAYIOTA IOANNOU

JUNE 2002

HIGHER | PROJECT NO.

Introduction

The basic scope of this project is to implement the idea of LiFLexiA. LiFLexiA is a method which is used to help dyslexic people get better. With the aid of multimedia tool system we will be able to implement the whole idea of LiFLexiA to a computerized form. An addition to our scope is to help dyslexic pupils improve themselves through this computerized form.

For the fulfillment of this system a great amount of words and vocabulary in general were gathered. It is very important for the dyslexic person to enrich his vocabulary throughout learning. So this material has to be reliable and trustworthy that is why the assistant of the teachers of the New Hope Private Special School was valuable.

Since this project is a multimedia system, it does not comply with many steps of the structured system analysis and design method (SSADM) approach. Therefore not all of SSADM's phases will be followed. Many of them will be altered or even passed over, as necessary, in order to provide the best possible documentation for this project.

Table of Contents i
Table of Appendices iv
Introduction v
About Dyslexia vi
About LiFLexiA xii

Chapter 1 – INVESTIGATION PHASE 1

1.1 INITIAL INVESTIGATION 2

1.1.1 Information gathering 2
1.1.2 Information about New Hope Private School 2
1.1.2.1 Goals 2
1.1.2.2 Structure of the New Hope Private School 2
1.1.2.3 Problems of the New Hope Private School 3
1.1.3. Information about the people 3
1.1.3.1 Staff of New Hope Private School 3
1.1.3.2 Teachers Duties and responsibilities 4
1.1.4 Information about the work environment 7
1.1.4.1 Location 7
1.1.4.2 Resources available 7
1.1.4.3 Expected Changes 7
1.1.5 Selection of programming language 7

1.2 FEASIBILITY STUDY 9

1.2.1 Introduction 9
1.2.2 Financial Feasibility 9
1.2.3 Schedule Feasibility 11
1.2.4 Technical Feasibility 12
1.2.5 Operational Feasibility 13
1.2.6 Human Factors Feasibility 13
1.2.7 Conclusion 14

Chapter 2 – ANALYSIS AND GENERAL DESIGN PHASE 15

2.1 EXISTING SYTEM REVIEW

2.1.1 Introduction 16
2.1.2 Methods and Procedures followed by the teacher 16
2.1.2.1 Improve Visual Memory 16
2.1.2.2 Improve Auditory Sequential Memory 17
2.1.2.3 Improving Short –term Memory 17
2.1.2.4 Improving Eye – Hand Coordination 18
2.1.2.5 Forming Words 18

2.2 NEW SYSTEM REQUIREMENTS 19

2.2.1 Introduction 19
2.2.2 User specification document 19
2.2.2.1 Overview Narrative 19
2.2.2.2 System Functions 20
2.2.2.3 Processing 21
2.2.2.4 Data dictionary 22

2.3 NEW SYSTEM DESIGN 23

2.3.1 Introduction 23
2.3.2 New system design specification 23
2.3.2.1 Performance criteria 23
2.3.2.2 Security and control 23

2.4 IMPLEMENTATION AND INSTALLATION PLANNING 25

2.4.1 Introduction 25
2.4.2 Preliminary implementation planning 25
2.4.3 Preliminary system test plan 27
2.4.4 User training outline 28
2.4.5 Preliminary installation plan 29

Chapter 3 – DETAILED DESIGN AND IMPLEMENTATION PHASE 30

3.1 TECHNICAL DESIGN 31

3.1.1 Introduction 31
3.1.2 Application software design 31
3.1.3 Human machine interface 31
3.1.4 Backup and recovery procedures 31

3.2 TEST SPECIFICATION AND PLANNING 32

3.2.1 Introduction 32
3.2.2 Unit Testing 32
3.2.3 Integration Testing 32
3.2.4 Function Testing 33
3.2.5 System Testing 33
3.2.6 Acceptance Testing 33
3.2.7 Testing Requirements 33

3.3 PROGRAMMING AND TESTING 34

3.3.1 Introduction 34
3.3.2 Process 34

3.4 USER TRAINING 34

3.5 SYSTEM TEST 35

Chapter 4 – ISTALLATION PHASE 36

4.1 Introduction 37
4.2 File conversion 37
4.3 System Installation 37

Chapter 5 – REVIEW PHASE 38

5.1 Introduction 39
5.2 Development Recap 39
5.3 Post-Implementation Review 39

Appendix A- Organization Structure 40
Appendix B – Gantt Chart 42
Appendix C1 – Context Diagram 48
Appendix C2 – DFD 0 Level (Enter the Class) 50
Appendix C3 – DFD 0 Level (Create and Modify Lesson) 52
Appendix C4 – DFD 1 Level (Enter the Class) 54
Appendix C5 – DFD 1 Level (Create and Modify Lesson) 56
Appendix C6 – DFD 1 Level (Create and Modify Lesson) 57
Appendix D – Data Dictionary 58
Appendix D1 – Data Stores 59
Appendix D2 – Processes 66
Appendix E – Report charts 76