



De La Salle University - Dasmariñas

**Multimedia on the Outer World on Focus in Astronomy
(MMOWFA)**

C.I.O.E

An Undergraduate Special Problem

Presented To

The Faculty of Mathematical Sciences and Computer Studies Department

De La Salle University – Dasmariñas

Dasmariñas, Cavite

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science in Computer Science

By

Ochoco, Ever R.

**Ms. Rowena Lee
Faculty Adviser**

March 1999

AKLATANG EMILIO AGUINALDO ARCHIVES

TABLE OF CONTENTS

Title Page	1
Adviser's Recommendation Sheet	1
Panel's Approval Sheet	1
College Acceptance Sheet	1
Table of Contents	1
List of Tables	1
List of Figures	1
List of Appendices	1
Acknowledgement	1
Abstract	1
 1.0 Introduction	
1.1 Background of the Study	1
1.2 Statement of the Research Problem	2
1.3 Statement of Objectives	4
1.3.1 General Objective	4
1.3.2 Specific Objectives	4
1.4 Significance of the Study	5
1.5 Scope and Limitations of the Study	6
1.6 Statement of Assumptions	8
 2.0 Review of Related Literature	
2.1 Multimedia: What Is It?	9
2.2 How is Multimedia Different from Traditional Data Processing?	12
2.3 The Role of Multimedia in Education	14
2.4 Science Education and Values	15
2.5 Related Works	17
2.5.1 Systems	17
2.5.2 Hardware	18
2.5.3 Software Applications	18
2.6 Related Studies	20
2.6.1 Local Studies	20
2.6.1.1 IMAGES: Introducing Multiple Application	20

of Graphics Enhanced with Sounds	
2.6.1.2 Training and Examination Program on Human Anatomy using Widows	20
2.6.1.3 An Information Software on the 9 Planets	20
2.6.2 Foreign Studies	21
2.6.2.1 The 1995 Grolier Multimedia Encyclopedia	21
2.6.2.2 Bodyworks	22
2.6.2.3 Funk and Wagnall's Encyclopedia Curiosity of Ancient Peoples	22
2.6.2.4 Multimedia, Making It Work	22
2.7 Review of Research Materials	22
2.8 Hypertext Systems	23
3.0 Methodology	24
3.1 Method of Data Collection	28
3.2 Method of Data Analysis	29
3.3 Method of Implementation	29
3.4 Method of Testing and Assessment	30
4.0 Theoretical Framework	31
4.1 Multimedia	31
4.2 Elements of Multimedia	31
4.2.1 Text	31
4.2.2 Graphic Images	32
4.2.3 Audio	32
4.2.4 Video	33
4.2.5 Animation	34
4.2.6 Sound	34
4.3 Features of Multimedia	35
4.4 Impact of CD-ROM on Students	35
4.5 Adobe Photoshop	36
4.6 Multimedia Goes to School	36
4.7 Advantages of Using Multimedia in Education	37
4.8 Limitations, Capabilities, Directions of Multimedia	37
5.0 Requirements Analysis and Software Specifications	38

De La Salle University - Dasmariñas

Page

5.1 System Overview	38
5.2 System Objectives	38
5.2.1 General Objective	38
5.2.2 Specific Objectives	39
5.3 Scope and Limitations	39
5.4 Assumptions	40
5.5 Requirements and Needs	41
5.5.1 Software Development Stage	41
5.5.2 Operation	43
5.5.3 User requirements	44
5.5.3.1 Graphical and Textual Information	45
5.5.4 User Interface	45
5.5.4.1 Icon	45
5.5.4.2 Graphics and Text	46
5.5.4.3 Menu-driven	46
5.5.4.4 Point and Click Operation	46
5.6 Problems that brought about the development of the project	46
6.0 Design Issues	47
6.1 Design Overview	47
6.2 Design Levels	49
6.2.1 Architectural Design	49
6.2.2 User Interface Design	51
6.2.2.1 Form, Function & Commands	53
6.2.2.2 Affordances	62
6.2.2.3 Font and Size	63
6.2.2.4 Color Scheme	64
6.3 Design Scheme	65
7.0 Implementation	67
7.1 General Issues	67
7.1.1 Programming Language	67
7.1.2 Design Issues	68
7.2 Program Requirements	69
7.2.1 Visual Basic 5.0	69
7.2.2 Hardware	69

De La Salle University - Dasmariñas

Page

7.2.3 Software	70
7.2.4 Choice of Media	70
7.2.5 Software Packages Utilized	72
7.3 Module Implementation	73
7.4 Testing and Acceptance	74
7.5 Implementation schemes & issues concerning the software	77
7.5.1 Developing the multimedia Systems	77
7.5.1.2 Elements in Multimedia System	77
8.0 Results and Observations	81
8.1 Methods	81
8.2 Findings of Study	82
9.0 Conclusions and Recommendations	84
9.1 Conclusions	84
9.2 Recommendations	85
10.0 Cost and Benefit Analysis	88

LIST OF FIGURES

- Figure 1 Prototyping Model
Figure 2 Data Flow Diagram
Figure 3 HIPO Chart

APPENDICES

- Appendix A-E. Certification Letters
Appendix F. Endorsement Slip
Appendix G. Approval Slip
Appendix H. Certificate of Acceptance
Appendix I. Initial Survey and Results Form for Students
Appendix J. Initial Interview Questions for Teachers
Appendix K. Interview Results of the Teachers
Appendix L. Teachers Acceptance Testing Results
Appendix M. Students Acceptance Testing Results
Appendix N. Outline
Appendix O. Screen Design

Bibliography
Glossary
Resource Persons
Curriculum Vitae



De La Salle University - Dasmariñas

ABSTRACT

The rapid advancement of technology has been affecting our daily lives nowadays. Anywhere we look, modern technology is present. This global phenomenon has changed the way we look at things. The power of this technology is presented to us via the help of multimedia sets. Modern approach in learning can be very effective using the Multimedia presentation. With proper utilization and implementation, this method will be of much value to the students as well as the faculties.

✓ The Multimedia on the Outer World on Focus in Astronomy (MMOWFA) is a multimedia system designed to provide information on the basic concepts of Astronomy. It can be likened to a book made more interesting with enhanced graphics that would encourage young people of today to learn more about Science and Technology, which is designed to supplement and not replace formal education. MMOWFA will also serve as an individualized learning kit to allow students to study Astronomy at their own pace. ✓

The proponent's endeavor would focus only on topics that deal with Astronomy in particular like the *birth, models and theories of the Solar System, sun, nine planets, asteroids, comets, meteorites, models and theories of the Universe, its size and expansions, types and shapes of galaxies and their clusters, star classes and clusters, other incredible space objects, nebulae, constellations, space observatories and explorations in outer space, telescopes, rockets, satellites, spaceships, astronauts, eclipses and moon*. MMOWFA will be made to cater particularly to the intermediate levels (Gr. VandVI) and to 1st Year high school students of St. Joseph College, Noveleta School, Grace Academy School who have Astronomy as part of their curriculum. The subject matter would not touch on other Science subjects such as matter, energy, motion, biological science and the like. Thus, it is the author's tasks to come up with a Multimedia – a modern technique that will not in any way replace the conventional method of teaching the subject matter but rather assist in the customary way of instructing the subject. Discussion will be done by using computer with the teacher assistance to monitor the advancement learning capabilities of each student. It imparts not only significant



De La Salle University - Dasmariñas

knowledge but also entertain the students. Multimedia technology was utilized due to the technology ability to facilitate faster learning to stimulate the audio and visual senses. Different forms of media such as text, pictures, graphics, video, animation and sounds are combined so that users can experience and learn the basics of Astronomy with fun and more appealing compared to the materials that are usually used in schools.

The researcher applied various methods of research in order to develop the software. The proponent distributed sets of questionnaires to different schools. She found out that 100% agreed to the implementation of multimedia as an effective learning tool. She also conducted interviews to some intermediate and high school teachers to ask their opinions and ideas about it when being implemented in schools.

Based from the methods being used, the researcher was able to gather the desired information needed for the software to be fully developed.

The developer hopes that the software product would satisfy all its intended users, and that it would be of help even to the teachers. This would lessen the hazardous task of making and using visual aids in the classroom. Eventually, may this product contribute to the improvement of Philippine education.