Virtual Learning Space for Kindergarten

By

Nurul Liza bt Yusoff

Dissertation submitted in partial fulfillment of
the requirements for the
Bachelor of Technology (Hons)
(Business Information System)

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CERTIFICATION OF APPROVAL

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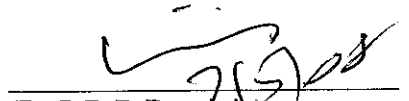
Approved by,



(Dr P.D.D Dominic)

UNIVERSITI TEKNOLOGI PETRONAS
TRONOH, PERAK
January 2008

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project/assignment, that the original work is my own except as specified in the references and acknowledgements, and that the original work contained herein have not been undertaken or done by unspecified sources or persons.

(NURUL LIZA BINTI YUSOFF)

ABSTRACT

This report covers the final draft of the study in which the title *Virtual Learning Space for Kindergarten* has been researched. *The Virtual Learning Space for Kindergarten* is developed using Macromedia Dreamweaver, Macromedia Flash MX 2004, Barbarosa Gif Animator and Adobe Photoshop 7.0. This project is carried out using Waterfall System Development Life Cycle Model. The *Virtual Learning Space for Kindergarten* will assist the kindergarten kids since *"Children are active thinkers who are constantly trying to construct new strategies and advanced understandings"* (Piaget). As the word kids might propose several definitions and explanation to different individual, this research stress on kindergarten kids whose ages are between 4 to 6 years old. Several meaningful findings are made during the research, which suggestively enable the author to tackle the matter in a broader view. By using the integration of multimedia which is the combination of sounds, animations and text, *Virtual Learning Space for Kindergarten* helps kindergarten kids in Malaysia to enhance their learning. The emphasis will shift from chalk-and-board method to interactive digital content delivered via the Internet. With sufficient access and support, teachers will be better able to help their students to understand concepts and engage in learning and to provide them with access to information and resources and better meet the students' individual needs. Technology opportunities presented leads to the enhancement of learning and improve students' achievement. It can enrich the exchange between kids and their families at home as schools are looking for greater parental participation in their children's educational. *Virtual Learning Space for Kindergarten* gives even the busiest parents an affordable and easy means to participate in their child's lessons and even work cooperatively with teachers where they can explore the world together. In the best of all worlds, parents and educators would be 'attached at the hip', working side by side, sharing information and planning opportunities to enrich kids' learning experiences at home and in the classroom.

ACKNOWLEDGEMENT

This project is especially dedicated to all web builders who are interested in taking up opportunity to build children website. I was geared to start on the research after reviewing hundreds of websites loaded on web and reading several materials on children's issues which are related to the World Wide Web.

It is a pleasant thing that I have now the opportunity to express my deepest gratitude to the person who has been closely supervising me throughout the semester and keenly guided me to take up effective efforts to ensure that I am able to complete this project within its time frame. I would like to thank my most supportive supervisor, Dr P.D.D Dominic for his constructive comments, suggestions, improvements and corrections regarding this project. I would like to express my sincere appreciation to him for providing me with the unique opportunity to work with him, for his expert guidance and mentorship, and for his encouragement and support at all levels.

I am very fortunate to have many good friends around me. Their readiness to guide me really helped me in various aspects especially in understanding much more details about the function of Macromedia Flash MX 2004. Thanks to Kaksya for her encouragement and sharing of ideas and also a big thank to Paress for being such a nice friend all the time, for all the inspiring and invaluable support.

I would also like to say thank you to all participants who were willingly spent their time answering questionnaires that have been distributed to them. And I also would like to say a big thank to all children and teenagers who had chatted with me through iRC and provided me with priceless information I need for my research. Last but not the least, I would like to thank all lecturers, UTP staffs and to all people out there who had help me directly or indirectly throughout this semester.

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ABBREVIATIONS AND NOMENCLATURES

WWW	: World Wide Web
IT	: Information Technology
CAI	: Computer-aided instruction
PHP	: PHP: Hypertext Preprocessor
HTML	: Hypertext Markup Language
XML	: Extensible Markup Language
SDLC	: System Development Life Cycle
PC	: Personal Computer
RAM	: Random Access Memory

CHAPTER 1
INTRODUCTION

1. BACKGROUND

Integration of multimedia becomes a very powerful teaching and learning tool. It has been placed at the center of current development in learning technology. Many types of multimedia integration can be discovered through the e-learning in global internet and almost of these stuffs are free and downloadable. Multimedia is a term that generally describes a computer based program that integrates several forms of media that may include video, sound, animation, graphic and text to create a multi sensory experience. The term interactive implies that the media responds to some input from the user. There has been an explosion in the production of multimedia application for children in recent years. There are games utilities and educational programs. Besides modules and knowledge about the subject, quizzes and activities provided can give a good result in developing minds of kindergarten kids.

1.1 Background of Study

As for this Final Year Project, the *Virtual Learning Space for Kindergarten* can be defined as an online system designed for both kindergarten's teachers and kids that serve as an e-center in order to create the teaching and learning process interactive. This e-learning offers a 'classroom-friendly' website as well as to offer school boards new ways to help the kids experience an interactive learning process. Main purpose of the project is to develop an e-learning website for kindergarten kids in learning basic subjects in a very effective way. The prototype consists of basic modules which applied

in Malaysia's kindergartens. Activities provided in way to enhance kids' mind and to generate their creativity.

1.2 Problem Statement

1.2.1 Problem Identification

In depth study on 'Children on the Internet' which was conducted in 1997 concluded that more than 98 million children were using the internet during that time. In the U.S alone, when the Clinton administration has enforced its' people to connect every classroom and library to the internet by year 2002, the percentage of U.S public schools with internet access has increased to 78 percent (Kim Wimpsett,1998). An estimated 42 million kids will be surfing the web by 2002 but yet so little has been done in reinforcing people to produce children's websites with outstanding qualities. This exciting phenomenon however paved the way of discussing the issue of children and the web openly but most of them were only too concerned with legal issues like the manipulating of children's personal info by advertising computer, the need of getting parental consent for logging on to the web by children under 12, the need of filtering software to filter out filthy information on the web and some other related issues. Thus it is pertinent to carry out research that will be able to present the attributes of websites that are likeable by children, what are the things children looking for on the web, what are considered as good websites and wrap the whole ideas and findings into a standard guidelines that will lead the web developers to develop 'good n sound' children's websites.

What is the different between game and educational programs? Certainly many games teach valuable cognitive n social skills. Chess can teach problem solving. 'Old maid' can teach memory skills and playing with blocks can develop imagination and spatial skills. Formal educational can be more productive when it has a certain amount of entertainment built in.

As the multimedia delivery is engaging, lessons need not to be boring and it supposed to be more fun to learn. The existing e-learning for kids is basically simple with certifiable approaches to implement an ideal instructional strategies and learning theories. Some however are irrelevant for children as this may be due to the fact that most learning concept are developed with adults or young adults in mind. E-learning for kindergarten kids is different from adult as adult require less guidance in controlling one's own learning. As for kids, it requires more use of graphical mode of representation and multi usage as compared to adults.

In world of computer nowadays, people are ready and prefer seeing computer as one of the medium of communication. Learning technology and educational applications have been discovered via WWW. Nevertheless, do all these utilities offer a great deal to ensure an effective learning environment? Existing program designed for kindergarten kids are sometimes questionable. Most of them are not attractive and inefficient. Colors are inappropriate and pictures are too small. Therefore, the purpose of this research is to come out with a simple, entertain and yet informative online based learning applications for kindergarten kids.

Problem learning in traditional way

Dull environment

The present methods and way of teaching in school especially in kindergarten is tedious and uninteresting where this situation can make kids bored.

Less effectiveness in learning

Old methods being used are ineffective and inefficient to attract kids for long term.

Lack of new material

Most of the kindergartens in Malaysia are still using old fashioned tools in teaching. Teachers prefer to use flashcards, manila card and papers. Depends on subjects being

taught, we need to identify what tools is better for pushing kids to maximize their level of knowledge.

1.2.2 Significance of the Project

This e-learning project is dedicated to kindergarten kids in Malaysia (aged 4 to 6 years old), allowing them to gain essential basic knowledge using the aid of entertainment and multimedia techniques. The *Virtual Learning Space for Kindergarten's* goal is to open a dynamic window to the world for kindergarten's kids. Access to the Internet gives teachers and students everywhere an equal opportunity to use the most stimulating and interactive teaching tool in history. It takes advantage of a new breed of access devices called Internet appliances, which provide a simple pushbutton-type of user interface that accesses information. The main target is promoting the idea of educational websites as well as providing the kids with a safe area where they can learn and expand their knowledge. This project will bring a positive impact of the Internet towards the parents who will then be encouraged to allow their children to browse the Net and learn through educational activities. Children are usually taught to trace numbers and alphabets in kindergarten and thus the same technique will be applied in the website which will allow them to learn while using the Internet. And the most important thing, it will introduce computers to children in a very productive way, therefore, putting forth a positive attitude to the use of the Internet. The aim is to provide educational activities along with fun. This is to ensure that the children's interest is kept.

The *Virtual Learning Space for Kindergarten* will be an absolutely perfect technology 'launch package' for any kindergarten kids in Malaysia and will be one of the most exhilarating experiences for them. This proposed system will also avoid the constraints on teachers' time. It creates a shared learning environment that allows kids to explore, learn and interact in unlimited ways. As well as this e-learning opens the world to kids in kindergarten, this project can enrich the exchange between kids and their families at home. Schools are looking for greater parental participation in their children's educational. *Virtual Learning Space for Kindergarten Kids* gives even the busiest

parents an affordable and easy means to participate in their child's lessons and even work cooperatively with teachers where they can explore the world together. In the best of all worlds, parents and educators would be 'attached at the hip', working side by side, sharing information and planning opportunities to enrich kids' learning experiences at home and in the classroom.

1.3 Objectives and Scope of Study

1.3.1 Objectives

This project serves the objectives of:

- To construct the learning modules in the most interactive and appealing environment for kids

  Modules will be presented in short time effective n attractive. Graphics and sound can give better understanding about the modules.

- To increase way of presenting the interactive learning content

The purpose is to create an interesting mode in learning environment to avoid bored situation while learning subject. It can create fun mood in learning environment.

- To gain more understanding experience in developing online learning prototype

- To prove an effectiveness of interactive multimedia element in educational

Research has to be done in order to see whether it really convinces and promotes advantages for the kids in get cope with syllabus content and to advance the acceptance of electronic publication as a legitimate and valuable form for academic course.

- To adapt technology and multimedia in teaching subjects

The most vital in developing multimedia learning tools is to improve the preparation of new teacher, increase quantity, quality and coherence of technology focused and activities aimed at development of teachers and improve the available instructional support.

- To expose kindergarten kids with IT environment especially at early age

Starting from kids, technology could be adapted in learning environment as a tool of learning presentation.

1.3.1 Scope of Study

The modules consist in the *Virtual Learning Space for Kindergarten* are Learn English, Bacalah Anakku and Mari Sembahyang. There are three subsections under Learn English section which are Learn ABC, Count 123 and Recognize Color. There will be lesson, and activities designed for kids in an interesting approach. In developing this e-learning, the study covers on several areas of software engineering, knowledge on program and computer interface as well as researches for literature review. New areas of graphical and animation tools are explored in the sense that it has to interact with kids. They will learn online through fun activities using the latest in graphical and animation technologies in a designated way that will stimulate kid's brain, helping lay the groundwork for a successful kindergarten experience.

1.3.2 Feasibility of the Project within the Scope and Time Frame

A feasibility study outlines all the data needed to ensure that a project is an economic success over a longer period of time. It measures the practicality and the development of a system will be to an organization. Feasibility study includes operational feasibility, technical feasibility and economic feasibility.

Operational feasibility provides the core understanding on how the system will operate as planned. It measures on how well the solution of problems or a specific solution will work in the organization and how people feel about the system as the success of a system is determined by its end users. It is not only important to evaluate whether a system can work but also to evaluate whether a system will work. There are two aspects of operational feasibility to be considered:

- Is the problem worth solving or will the solution to the problem work?
- How do the end-users and management feel about the problem (solution)?

It can be said that intangible benefits can be derived from this project as it may enhance knowledge of kids in terms of level of information they receive and better improved their knowledge power. Therefore, this project is economically feasible to be developed.

Technical feasibility engages with technical structure of the system. One of the essential parts in technical feasibility relates to software and hardware. In terms of technical feasibility, developer has sufficient experience and familiarity with the application used in this project, that is the Macromedia Dreamweaver as it has been extensively used to develop other systems as well. Other software used to develop this project includes Macromedia Flash MX, Barbarosa Gif Animator and Adobe Photoshop 7.0.

The bottom line in many projects is economic feasibility. This is often called a cost-benefit analysis. During the early phases of the project, economic feasibility analysis amounts to little more than judging whether the possible benefits of solving the problem are worthwhile. The project's moderate size has also made this project feasible within the scope and time frame.

CHAPTER 2
LITERATURE REVIEW

2.1 OVERVIEW

This section's main objective is to review the analytical, critical and objective of written materials on the chosen topics.

Interactive teaching methods have long been considered a superior approach for teaching subject material and skills in the area of business and management (Michaelson, 1993). These methods may include in-class processes such as debates case study and role plays. As computer has become more widely used, computer supported presentation methods and computer-aided instruction (CAI) have also been employed both to enhance in-class instruction and to supplement class instruction with autonomous learning (Bigelow, 1993).

E-learning for children is relatively new for the online community. This may be contributed by the fact that it is assumed that children are the least as the users of the Internet community. However, as the result of the massive Internet explosion amongst the recent community, children shall have to be better equipped in order to partake in the future of the Internet. In this context according to Cisco (2001), *"E-learning is Internet-enabled learning"*. It refers to learning any type of information via online facilities.

2.2 Introduction to the Web Based E-Learning System: An Evolution of Education

E-learning can be recognized as an alternative to the classic school learning or even solution to additional learning as the replacement to the traditional classrooms. School learning usually involves time cost and effort as children particularly have to make effort to take bus or walk to school premise and sit for at last half and hour per course. As indicated by Adam (1997)*"Reasons for failure in schoolwork by this age are many: inability to adjust to school (and, sometimes, the teacher), faulty teaching methods (including lack of good special help for slow learners), lack of encouragement from home, etc".*

Internet brings communities closer than ever before, making education available to many. Chalk-and-board instructional mode has long ruled the classrooms and lecture halls for the last two centuries. Even today, there are many schools and colleges, using this instructional mode. Some may have incorporated PowerPoint presentations together with the chalk-and-board method. We cannot deny that this is one of the effective modes of presentation and that it is here to stay for many more decades. However, the emphasis will shift from chalk-and-board method to interactive digital content delivered via the Internet. E-learning has some undeniable benefits over traditional learning methods. This is indicated by the demand for multimedia-based content as well as the growth of educational software. The e-learning content is available on-demand. Another benefit of e-learning is that the content can be easily customized, updated and maintained at the server side. The content will be consistent and this gives the learners equal education opportunity. Some theories and concepts can be easily explained using multimedia tools and simulation software. With the World Wide Web already enjoying over 150 million users, it is no surprise that e-learning is set to become the biggest sector in the technology training market within the next 3 years. Indeed, with the technical advances and innovation associated with the web this rate will most probably accelerate. E-learning will continue to reshape education over the next two decades.

2.3 Advantages and obstacles of e-learning

Advantages and obstacles can be viewed as suggested by Hall (2000)

Advantages
Courses available via intranets or internet are easily accessed without additional software (just a browser)
Training can be self paced so learners can go at their own chosen speed.
Training is available at anytime and any place
Training can be less expensive
Updates can be achieved quickly by posting changes to the web intranet or computer network
Time requested for can be shortened by 50 percent

Table 2.1 Advantages of e-learning

The mentioned advantages are designed in order for society to understand and see benefits of e-learning. The problems in traditional classroom as indicated by Adams earlier can be solved by adding e-learning to child educational.

Internet is an amorphous medium that works as a push button that lead people to any possible direction. It is governed by the evolutionary rules that keeps on evolving at an infinite rate and cannot be stated with any certainty. Since the last few decades, it has played major rule in communication patterns and processes and still claiming its stake in running the lives of individual for various purposes like online business, entertaining, educational and personal gratification. Apart from advantages of e-learning, there are also obstacles in order to develop its quality. Most of obstacles however are basically based on the technicalities of the network or internet facility. It is presumed that most obstacles can be resolved once the technicalities are provided with appropriate solution (Hall).

Obstacles
Lack of bandwidth can slow interactivity
Audio and video may be forbidden on the network
Some courses are not applicable for teaching delivery unless it is promoted by a mix of instructor-directed in e-learning
E-learners needs to be fairly self directed or otherwise motivated to complete course

Table 2.2 Obstacles of e-learning

Obstacle number 3 recognizes the involvement of a tutor in order to promote the learning. This applies to certain types of courses that require tutor based support.

According to Hall,B.(2000),*"The first step will be to make sure you have in place proper front-end analysis, including clear identification of who will be trained, what needs to be learned, and a performance analysis of what the job requires improvement. A good instructional design can make up for poor quality of media but it does work the other way around"*. Hall indicates the basics in order to develop a great instructional design. It is important that a good design contains the proper identifications of the target audience, the contents of the learning and improvements for learning subjects.

Some studies have shown that there are mainly three attributes that contribute to the good children's website selection which are interactivity, design and content (Yasmin, 1999). 3 different criteria must be possessed by any website in order to be called good children website. In her research, Yasmin proposed that the most desirable attributes of an ideal children's website must ensure that it allows for incidental learning, specific information gathering and entertainment.

2.4 How Children Learn

Based on Jean Piaget (1896-1980), [19] he found out that children learn through adaptation, example like in '*adapt to the environment*'. In adaptation, two processes are involved, assimilation that involves reacting on the bases of the previous learning and understanding and accommodation that involves a change in understanding. As the example given by Piaget, a child who has learned the rules of addition can assimilate a problem such as 1 + 1; that is he or she can respond appropriately in terms of previous learning. Changes in the learning process like when he or she has 2 apples left and mom bought 3 new apples, therefore is understood that the number of apples has increased. Therefore, this shows the accommodation.

Besides, children also learn through '*play and imitation*'. According to Piaget (Theories of Human Learning, 1999) [13] [19], when children play, they continually assimilate objects to predetermine activities and ignore attributes that do not really fit the activity. While play only contains the assimilation, imitation is primarily accommodation. When children engage in imitation, they constantly modify their behaviour according to the person or things they see.

2.5 Effects of computers on Kindergarten Kids

Traditional preschool curriculum involves a variety of activities that try to promote a *"balance of social, emotional, physical and intellectual stimulation for the young child"*. (Campbell, Fein 46). Supporters of the computer see this new technology as very beneficial to the preschooler as thinking skills are developed and an extensive amount of problem solving and planning can be tested. The computer stimulates the child to perform tasks otherwise not developed until the later stages.

Computers are extremely effective in association with kindergarten kids. Computers and technology tend to have more positive effects on young children than negative effects. The children become more educated and advance in their learning development.

One thing that computers offer for everyone, especially children, the instant gratification they can receive when they push a button and they are rewarded. Attention spans of preschoolers is very short so when they hit a button and they can predict the outcome, the child feels comfortable and in control. [6]

CHAPTER 3
METHODOLOGY

3. PROCEDURE IDENTIFICATION

3.1 Hardware Preparation

A PC with Windows platform is needed to make this project possible.

3.2 Software Preparation

The web based application tools software is used due to developer's familiarity with the software. These include PHP, HTML and XML. Besides, its feasibility to interact with the server and availability or resources to refer to is additional factors affecting the selection of the software. Graphical packages and animation tools software may be used in order to construct an inviting environment for kids to learn and interact. These tools include Macromedia Flash MX , Barbarosa Gif Animator and Adobe Photoshop 7.0.

3.3 System Development

The e-learning development consists of five phases in accordance to that of the waterfall system development life cycle (SDLC) model. Using this model, the project will follow a sequence of stages in which the output of each stage becomes the input for the next. These stages can be characterized and divided up in different ways, including the following:

- **Project planning**

During this stage, a thorough study of web based application tools software and how it functions are among the activities involved. The purpose of this phase is to document the

objectives, scope and requirements of the system so that a high-level view of the website can be gained after a proper planning and study.

- **Systems analysis**

This stage involves lots of research, analysis, self study and information gathering from various sources to master the requirements needed to build the online the *Virtual Learning Space for Kindergarten*. A lot of researches and surveys are done to get feedback of kindergarten's learning modules and their teaching process. Reading from journals, internet, books and other methods of information gathering prepared in this stage to gain insights on the matter the project is trying to resolve.

40 copies of questionnaires have been distributed to kindergarten teachers in order to analyze their point of view regarding this e-learning project. (APPENDIX 1)

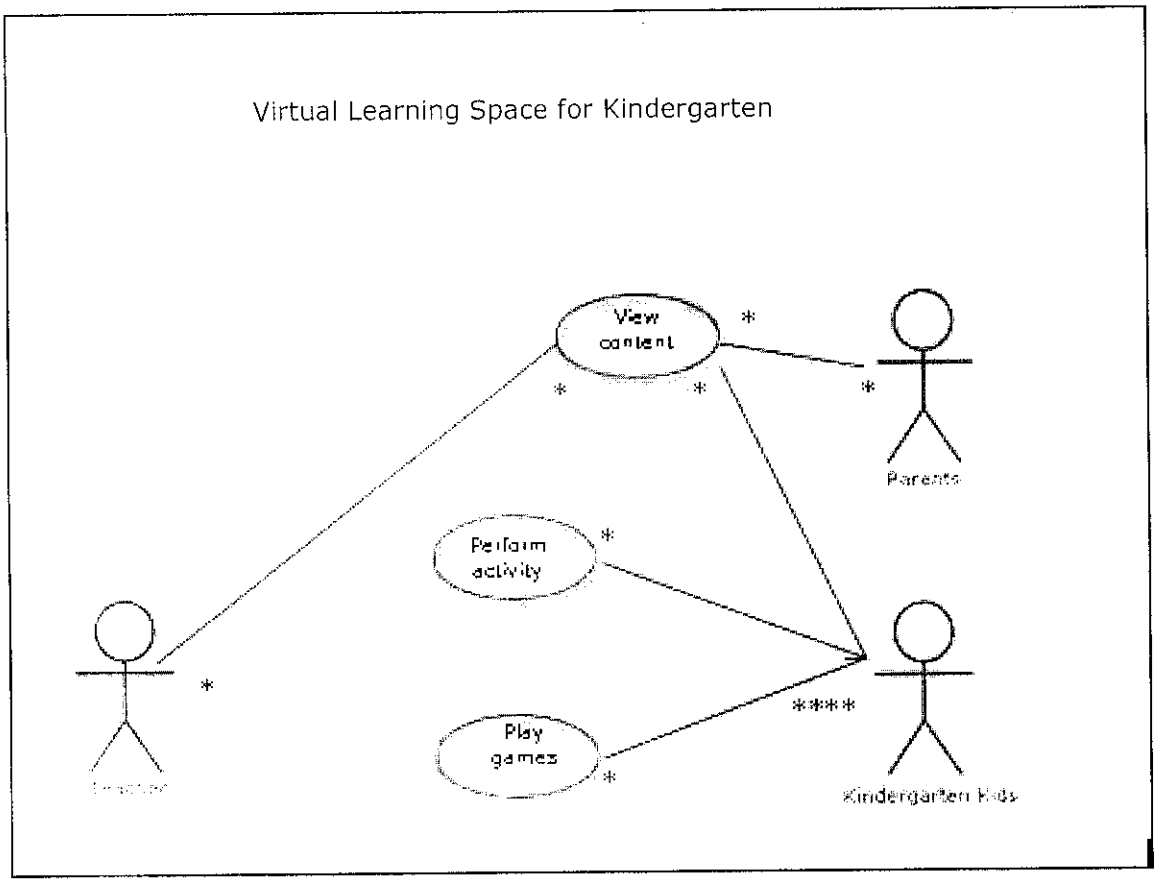

Figure 3.1 Use Case Diagram of *Virtual Learning Space for Kindergarten*

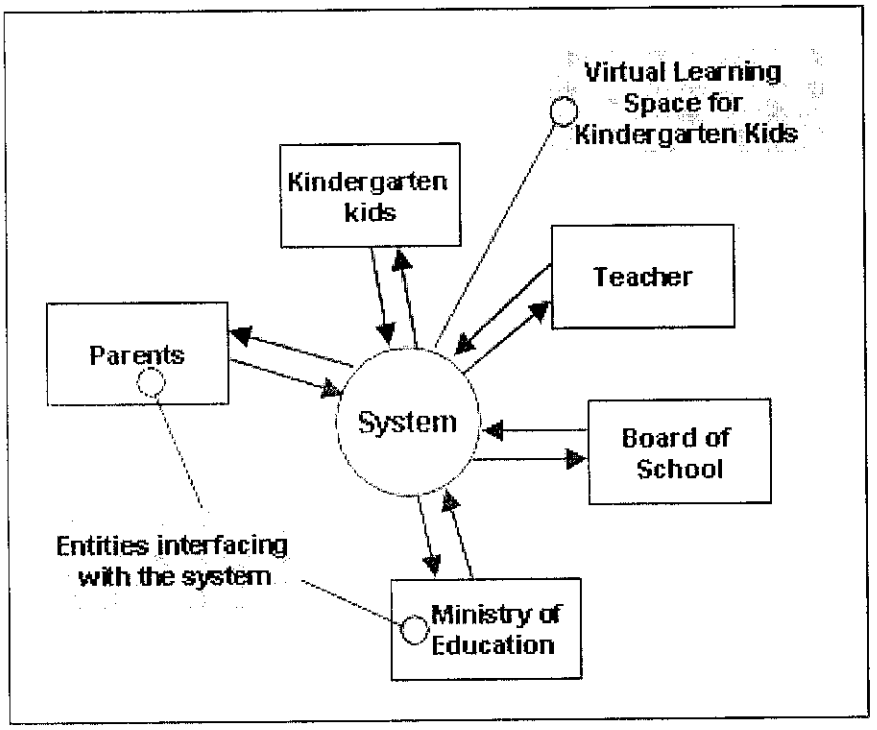

Figure 3.2 Context Diagram of *Virtual Learning Space for Kindergarten*

The system is encapsulated fully within the circle. This technique does not show any of the inner workings of the system. Instead it focuses on the systems context. The focus is on the external entities that the system needs to interface with successfully. These are represented by named boxes and connected using directional arrows.

The context diagram clearly organized into 2 areas which are:

- The system
- Things that interact with the system

In the case of this final year project, the system will be the e-learning itself, while entities include Teachers, Parents, Kindergarten Kids, Board of School and Ministry of Education.

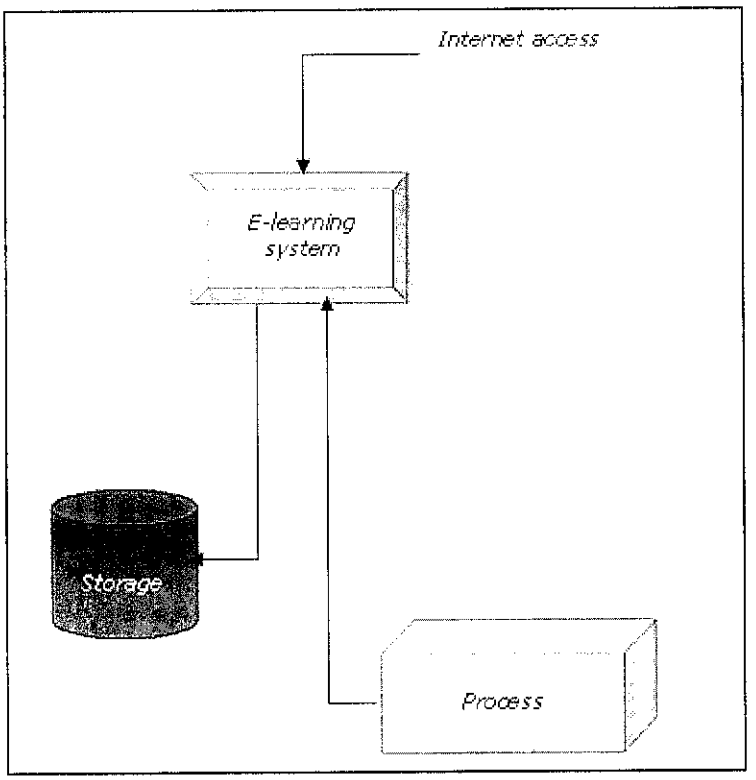

Figure 3.3 Data flow diagram of *Virtual Learning Space for Kindergarten*

- **Systems design**

This stage consist of tasks necessary to describe how the proposed system will be developed including interface design and information of kindergarten's learning modules.

- **Implementation**

During this stage, all codes to integrate the online server functions with the interface of web based platform will be implemented. The website will be linked to the system.

3.4 The Design Prototype

The design prototype of *Virtual Learning Space for Kindergarten* consists of few main pages including all main three modules. The pages will be presented in a colorful kids' environment. The mentioned design prototype above is shown in figures below.

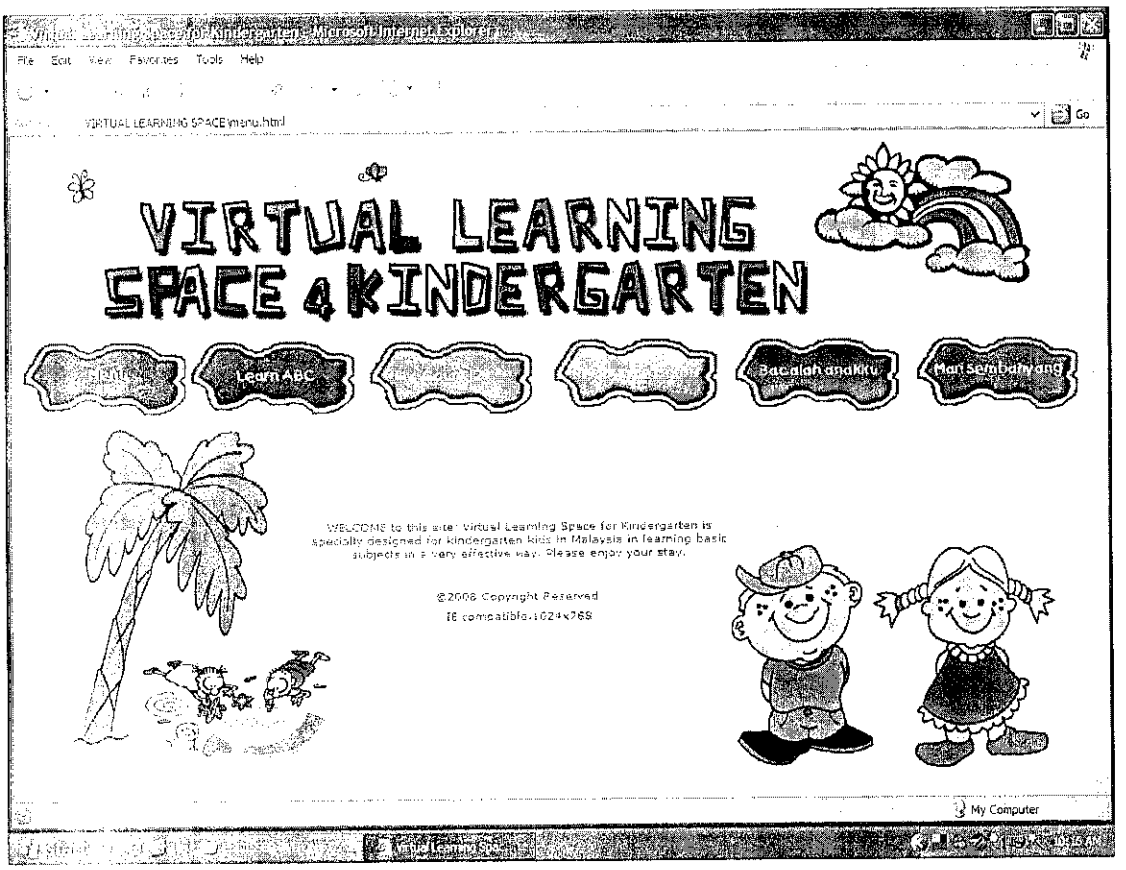

Figure 3.4 Screenshot of *Menu* page design

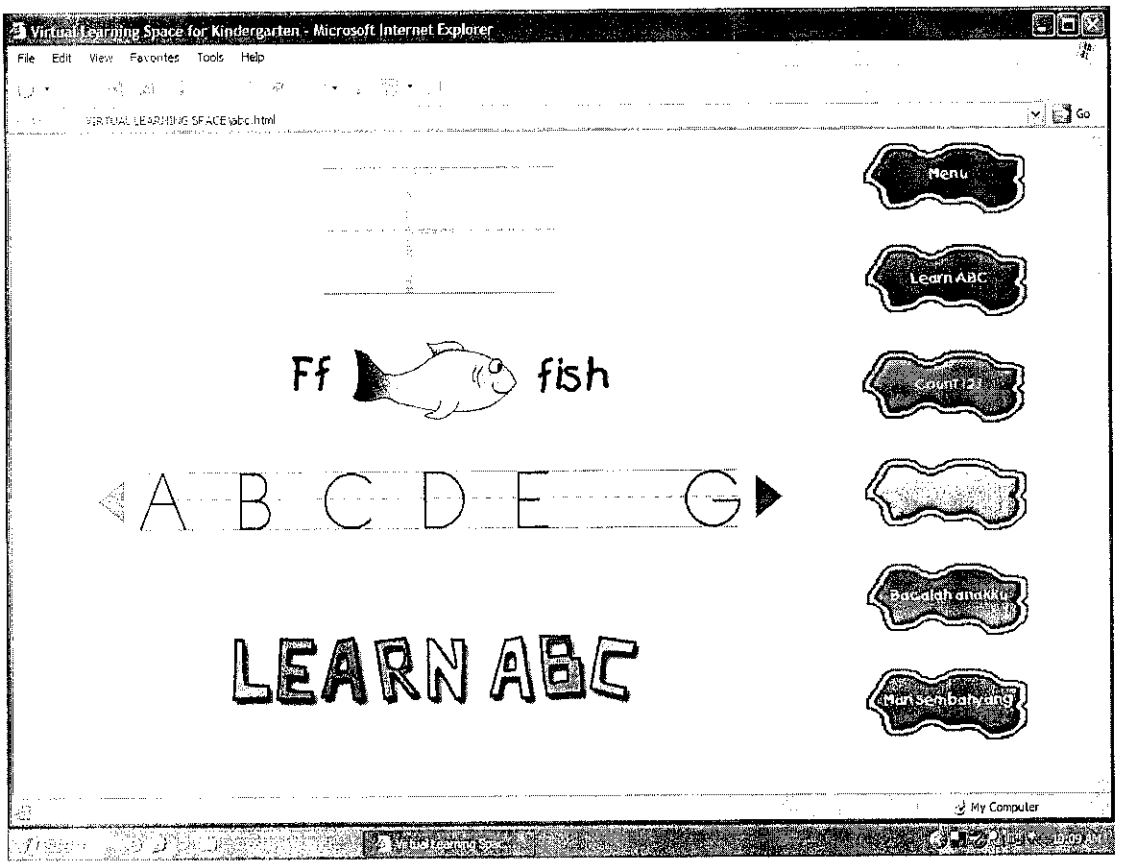

Figure 3.5 Screenshot of the *Learn ABC* page design under *Learn English* section

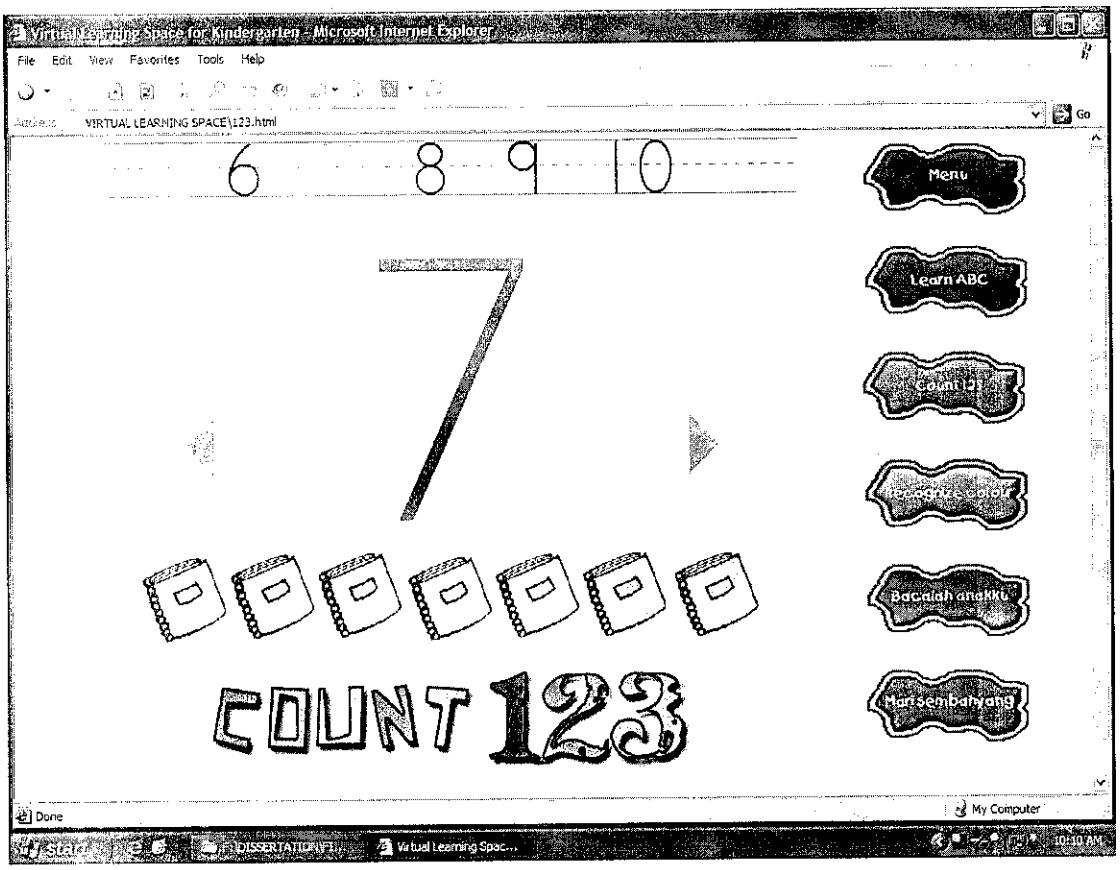

Figure 3.6 Screenshot of *Count 123* page design under *Learn English* section

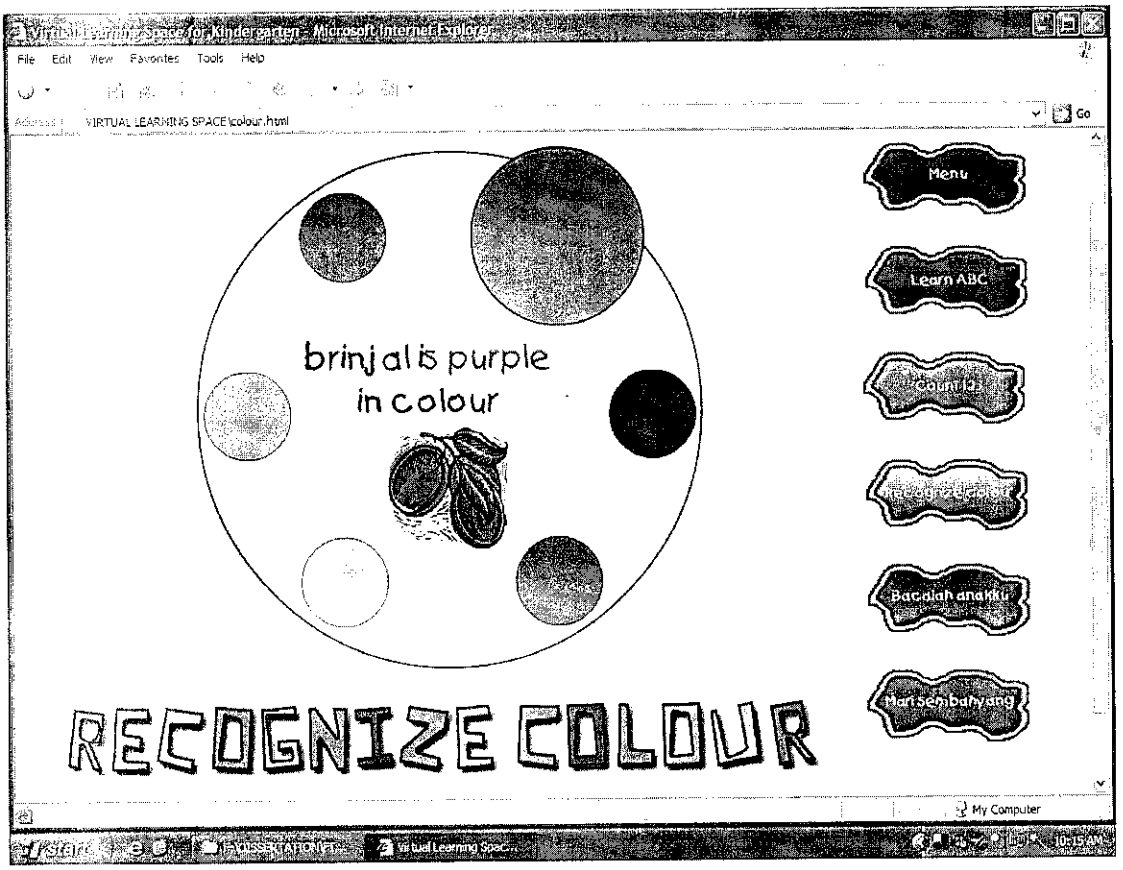

Figure 3.7 Screenshot of *Recognize Colour* page design under *Learn English* section

Figure 3.8 Screenshot of *Bacalah Anakku* page design

Figure 3.9 Screenshot of *Mari Sembahyang* page design

- **Integration and testing**

This is where everything will be ready to bring to testing environment. Any error, bugs and interoperability will then be checked.

The mentioned development process above is summarized in Figure 3.10 below.

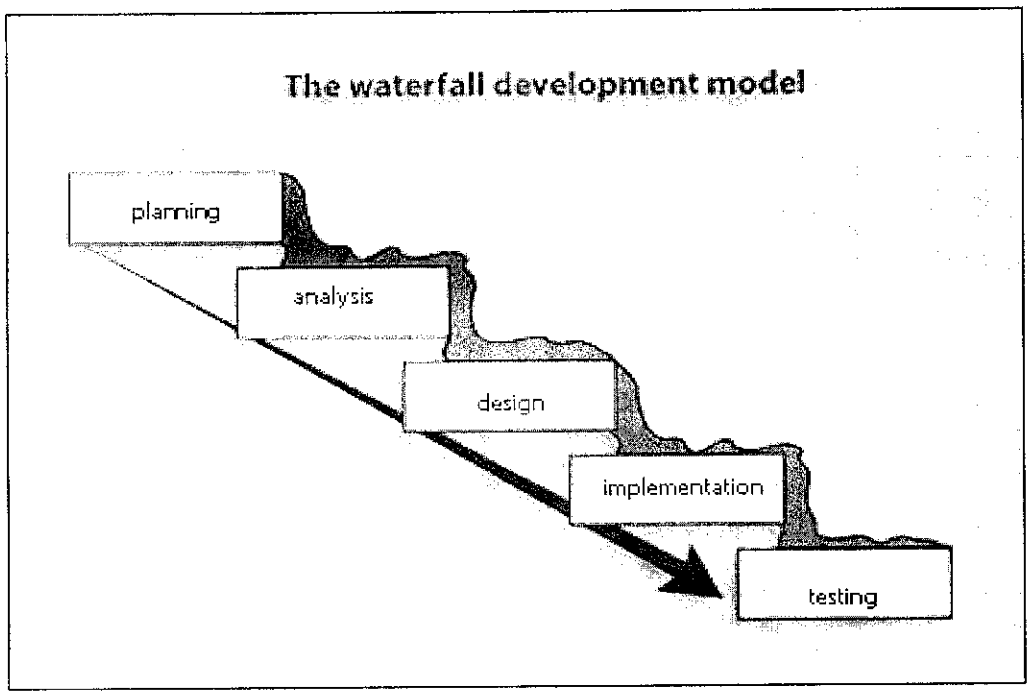

Figure 3.10 Development Process of *Virtual Learning Space for Kindergarten*

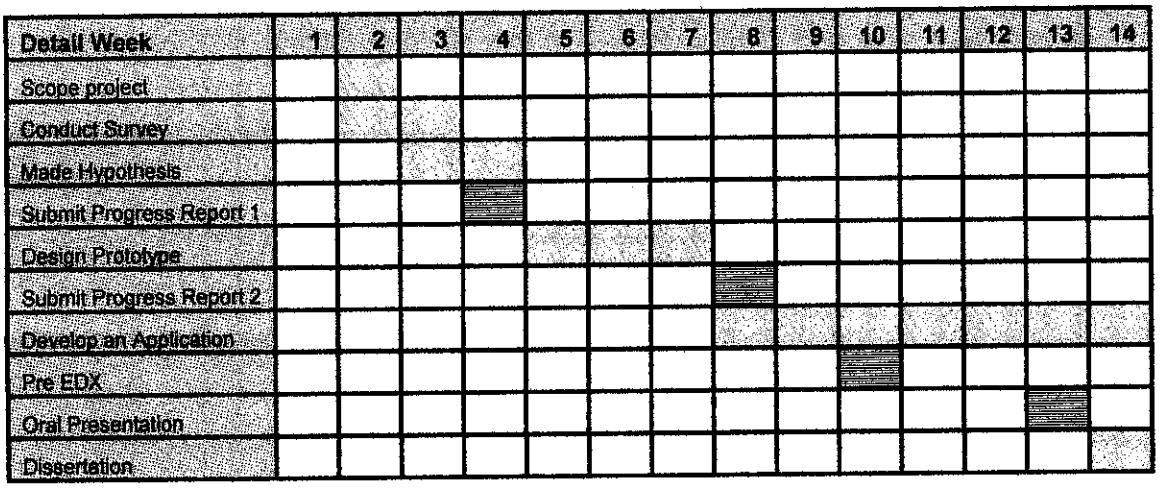

Figure 3.11 Gantt Chart for Final Year Project II

3.5 Tools Required

As a vital requirement for the completion of this project, several tools are required including:

Hardware:

- A personal PC of Windows platform with at least Pentium II Processor 500MHZ speeds for quick data processing and retrieval.
- Minimum of 128 MB RAM
- Minimum of 2.0 GB hardisk to store all the data and web based material
- Flatbed scanner

Software:

- Macromedia Dreamweaver
- Macromedia Flash MX 2004
- Barbarosa Gif Animator
- Adobe Photoshop 7.0

CHAPTER 4
RESULTS AND DISCUSSION

4. ANALYSIS

4.1 Data Gathering & Analysis

40 copies of questionnaires have been distributed to 40 kindergarten teachers in district of Penang and relevant answers will be discussed. The purpose of this questionnaire is to search out for opinion regarding this final year project.

In each kindergarten, respondents were asked to provide information and make as close an estimate as possible in the questionnaire. The picture obtained from the survey will be the fundamental of the development of the *Virtual Learning Space for Kindergarten.* The feedback provided through this survey helps to determine the content offered in the website. The responses have been analyzed and a summary of the results is shown below.

The most significant findings which the questionnaire has brought for the signs of a good e-learning for kindergarten kids are:

- Children learn numbers and the alphabet in the context of their everyday experiences. The content of the web-based e-learning system must have a combination of animals, shapes, fruits etc.

- E-learning for kindergarten kids needs supervision by teachers or parents

- Opportunities for children with diverse backgrounds and developmental levels to participate in whole-group activities

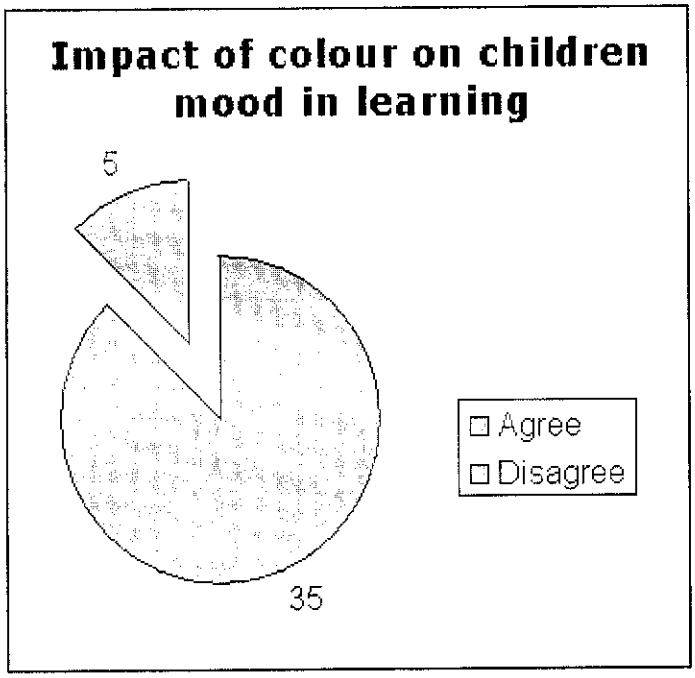

Figure 4.1 The survey result of impact of color on children mood in learning

The finding shows that 35 out of 40 respondents agree that colour does impact children mood in learning.

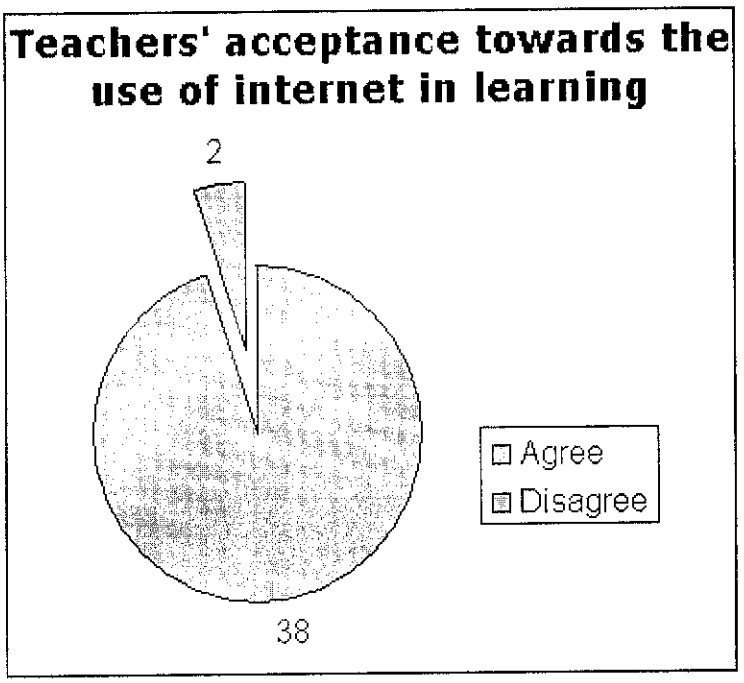

Figure 4.2 The survey result of teachers' acceptance towards the use of Internet for their students to learn

From the survey, the result shows that 38 out of 40 respondents agree that it is good for their students to learn through internet.

4.2 Results and Discussion

The expected result of this project is to make the kids become interested to learn at their early age. Although the chalk-and-board mode of instruction will not be eliminated, emphasis will be on multimedia-based instructional mode where the content is delivered digitally using text, graphics, animation and sound with elements of interactivity. Activities and games designed for kids in a very exciting method will attract them to be more engrossed in learning activities. The website allows kindergarten kids to learn mainly through play and interactive activities. The Internet exposes kids to a vast range of experiences and promotes interactive learning. It helps the kids to become computer literate at an early age and provides a safe environment in which the kids can work and achieve at their own level. It also helps the kids to provide repeated readings of stories so they can gain mastery of the narrative, ideas and language. It provides opportunities for children to talk about what is read and to focus on the sounds and parts of language as well as the meaning.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

5.1 Conclusion

It can be concluded that this project will serve as an online system as a teaching and learning tool for kindergarten's teacher to teach the early age kids. This e-center will help the teacher in making the learning process interactive and attract kids to learn. Thus, it makes this *Virtual Learning Space for Kindergarten* more interesting and experiential. The achievement of this project should be very beneficial towards the development of online based learning for kindergarten kids. This project would perhaps be the guidance for other research project in the aspect of introducing online learning to early childhood education. It is also important to state that this project is practicable and capable of delivering information that is related towards the process of exposing early age kids towards the use of internet.

Kindergarten is a time for children to expand their love of learning, their general knowledge, their ability to get along with others and their interest in reaching out to the world. While kindergarten marks an important transition from preschool to the primary grades, it is important that children still get to be children and getting kindergarten kids ready for primary school does not mean substituting academics for play time, forcing children to master first grade "skills" or relying on standardized tests to assess children's success. Kindergarten "curriculum" actually includes such events as snack time, recess and individual or group activities in addition to those activities we think of as traditionally educational. Kindergarten kids will continue to develop control of their own behavior through the guidance and support of warm, caring adults. At this stage,

children are already eager to learn and possess an innate curiosity. Teachers with a strong background in early childhood education and child development can best provide for children what they need to grow physically, emotionally, and intellectually. But all developmentally appropriate kindergarten classrooms will have one thing in common: the focus will be on the development of the child as a whole.

5.2 Recommendation

The result depends soundly on research papers and web as prime resources for data gathering and analysis. As to validate the hypotheses, interviews have to be done with parents of kindergarten kids. In the future, the result could be enhanced by distributing the questionnaire to the real users, the children itself. Target group should be larger enough so that the results obtained from questionnaire are reliable.

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APPENDICES

Appendix 1: Questionnaire Sample

This questionnaire contains one section that is to be answered by kindergarten teachers. Please circle and state your answers representing the most appropriate responses for you in respect of the following items.

1. Do you agree that color does impact children mood in learning?

A. Yes
B. No

2. From your opinion, what colors will increase the students' motivation in learning process

_____

_____

3. Do you agree that colorful learning environment will increase children learning motivation?

A. Yes
B. No

Why?

_____

_____

4. Other than conventional teaching methods, do you think it is good for your students to learn through internet?

A. Yes
B. No

Why?

_____

_____

5. Do you think e-learning for kindergarten kids' needs supervision by teachers or parents?

A. Yes
B. No

Why?

_____

_____

6. From your opinion, what subjects are suitable for your students to learn through internet?

_____

Why?

_____

_____

7. Does your kindergarten have any computer/computer facilities? If yes go to question 8, if no go to question 9.

A. Yes
B. No

8. Do you plan to have internet access/to have one?

A. Yes
B. No

9. Do you plan to buy a computer in the near future?

A. Yes
B. No

10. Do you feel comfortable with online teaching?

_____

_____

11. If you were to conduct an online learning, do you prefer it to be a formal one or not? Please specify your answer.

A. Yes
B. No

Why?

_____

_____

12. Please state any additional/special elements that you would like to see in an online teaching curriculum

_____

_____