Clean Healthy Living for Kids in 3D

By

Tengku Aishah Tg Md Tajuddin

Dissertation submitted in partial fulfillment of

the requirement for the

Bachelor of Technology (Hons)

(Business Information System)

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Universiti Teknologi PETRONAS

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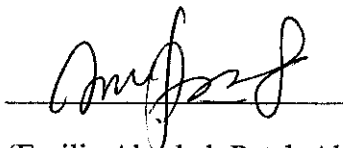# CERTIFICATION OF APPROVAL

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Approved by,
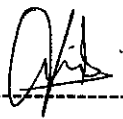
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(Emilia Akashah Patah Akhir)

UNIVERSITI TEKNOLOGI PETRONAS

TRONOH, PERAK

September 2011

CERTIFICATION OF ORIGINALITY

This is to certify that I am responsible for the work submitted in this project, 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.

(Tengku Aishah Tg Md Tajuddin)

ABSTRACT

In order to support our government to become healthier nation, Clean Healthy Living for Kids is designed and developed based on psychological needs and adaption of current technology. The new approach of the learning style for children is to help them understand better because of arising some of the problem on current learning on this topic such as long text and language problem. This learning tool is special for children at early age from 5 to 7 years old.

Research on topic had done by supportive from the journal and other expertise that did the research on the scope of study. The information is collected from the interview and also observation techniques. The multimedia approach and 3D image will be the attractive point to the children for the learning process and practical to practice. This learning program is a tool to support children behavior and attention. The project is developed by following the project methodology and it is ongoing with the user to meet the user requirement.

Finally this learning program will help children as a supporting tool of early learning process which is can sustain and maintain their interest on clean and healthy living. The design of the learning program will be in the suitable for children in the range of 5 to 7 years old suitable with their level of thinking

ACKNOWLEDGEMENT

Alhamdulillah I bid for granting me the strength and perseverance necessary to complete this project. The past 8 months have indeed been an amazing experience and journey to embark on. I have learnt so many things from scratch until the completion of my own proposed system which has been fruitful to my learning curve thus far.

I would like to sincerely thank to my supervisor, Ms Emilia Akashah Patah Akhir for supervise and help much to my colleagues and I throughout the whole 2 semester of completing Final Year Project. She manage to guide me, gives some direction patiently to help me in completing the project. Although there have many problems along developing the project, yet, she manages to give ideas and suggestion to solve. Thank you, Ms Emilia for your guidance.

I would also like to thank my family especially my cousin for helping me a lot in doing observation on children behavior and children learning style. Not forget to my mother and father for giving me high moral support in completing this project. I really appreciate your great encouragement, advices and morale support.

Lastly, thank to my colleagues for the support and guidance especially to my roommate; Ms Adawiah for patiently help me in discovering the software. With all your positive support and patient guidance give me motivation to complete successfully on my project. My prayers are always with all of you.

Thank you.

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CHAPTER 1

INTRODUCTION

1.1   Background of Study

This learning program is on developing a Clean Healthy Living for Kids in 3 Dimensional (3D). In Malaysia, clean health management is still in traditional way which is from the teacher, parents, books, seminar and also from internet. This learning program has proposed interactive multimedia and 3D image to encourage the children to gain interest in learning and practicing clean and healthy living from the early ages. This learning program is categorized as edutainment where children gain knowledge by going through a creative learning process while they are really enjoying it.

The Clean Healthy Living for Kids in 3D has its own target user. It is to educate young children in range of age from 5 to 7 years old while introduce to them with the informal education which is very important in our life but not teaching formally in school. This program will approach on a basic knowledge and basic practice for the early age children where they are still in the learning process to know the world. There will be a lot of activities on basic steps and practical practice for kids and also includes exercise to make it be more interactive program.

This program just not loads of words, pictures and videos but it is introduced as an attractive and interactive learning program with mixture of the right picture, simulation, audio, colour and absolutely the 3D view where it can create children's attention.

The optional language English and Malay will be used in this program can give motivation to the children to explore more and comfortable with the chosen language.

1.2 Problem Statement

- Level of clean health awareness is still low among the Malaysian people especially for the young generation.

- Children at early age tend to get bored from reading material which they also can't really understand the message in the books or article.

- The language problem also is the limitation of learning clean and health management among Malaysian children. The reading material or free resource in the internet based on topic clean and health usually formed in English language.

- Time with their teacher and parents is limited. There is no extra support for self-learning.

1.3 Objective

The purpose of this Clean Healthy Living for Kids in 3D is to suit the current learning style for kids thus our world are moving in the technology. The 3D implementation could be the main subject to attract kids to learn which it's parallel with the familiarization the kids with the computer tools nowadays.

1- To design and develop a suitable prototype of learning method for children to enjoy clean healthy learning and practice it with fun.

2- To develop a prototype with dual main language; Malay and English.

3- To design a prototype of learning tools for children use in flexible time by using internet based.

4- To study on learning theories and children behaviour in designing and developing the right material and tools for them to learn in effectiveness.

1.4   Scope of Study

The scope of this project will be focused on basic clean healthy living for children at the early age range from 5 to 7 years old. They are in the level of beginner in the learning process whereby during at this age, the children could absorb lesson easier compared when they are getting grow up.

The learning program will be designed based on edutainment concept where children can learn and enjoy doing and practicing basic activity on clean healthy such as how to wash hand correctly. Edutainment concept will be more effective if it combine with the multimedia approach such as song, video and so on.

The prototype will be able to perform images in 3D view with other suitable multimedia elements like audio and text. With a good functionality, user will engage longer with the learning program and hopefully will absorb better understanding in order to practice it well. 3D view gives the user to explore around the scene with 360 degree view. User can turn right, left, upside and downside to view. It gives the opportunity to the user to view as they are at the real place.

The software to develop this project is available due to current advance technology make it realistic and relevance to develop it. Research on the scope of study would be finished by final year first semester and the contribution of developing the project will be finished in final semester. With a smart schedule and creativity of using the software available will meet the expectation on the right track.

1.5 Technical Feasibility Study

Throughout in designation of the project, technical feasibility has been conducted in order to determine the difficulty of carrying out the designated task.

Project is feasible technically although there have some risk.

- The project developer inexperience in developing the virtual tour.
- The user guide on using the tools will help the developer to be familiar with the tools.
- Majority of target users are well familiar of using computer and surf internet nowadays give chance for them to be familiar with the technology used for the prototype.
- The size of the project is considered as in medium size since it would be able to finish the prototype in 8 months.
- With the user guide and availability of tools make it possible to complete with the medium range of complexity.

CHAPTER 2

LITERATURE REVIEW

Malaysia is moving towards creating a better healthy lifestyle in order to improve the standards and quality of life. Based on Tenth Malaysia Health Plan, our government formulate the healthcare programme with concept 1Care for 1Malaysia [1].This learning program wants to support our government to achieve our Vision 2020. Educate from the early age is the best way make sure the young citizen will be on the right track in performing the vision.

"Healthcare of the highest order will now be accessible to the rakyat upon the completion of this project by 2015. HM is expected to attract global medical talents through innovation 'brain gain' strategy, tax incentives and world-class infrastructure"[2].

In leading to healthier life, this learning program uses the multimedia approach to attract the children. It is to attract the children attention to make them engage with the learning program longer and give better understanding for them. This learning program is to change their perception of taking care on clean and healthy living is such a fun and enjoyable activity. This program will be the sequences from what the children learn from the kindergarten or at home. Children start to learn from reading, watching and also from listening process. This program helps the children through interactive simulation and picture where the children can handle it them self by following and enjoying practicing it.

Our country starts aware with the children healthcare which they did Health Education Program along 2010. Johor Bahru City Council Health Department organised a series of activity for 'Jelajah Tabika 2010' (nursery program) [3]. Children had been exposed to clean and healthy activity through practical activity and seminar by the respective person form health organization and health ministry.

2.1 Edutainment

The traditional ways of learning are from classroom learning and children's activity which is outdoor activity is still a practical learning style to practice. In this fast technology and better level of education among children need more effective and attractive learning style which is suit with the level of children nowadays. The edutainment style of learning is the combination of learning and entertainment become a popular approach for the young children to gain knowledge while make it fun through multimedia [4].

Children tend to explore more and gain better understanding if they are approached to the right learning style which is combination of graphical marks such as dynamic, pictographic, iconic, written and symbolic [5]. All of the five forms will create the children's interest in learning and will response a positive feedback.

2.2 Multimedia as Learning Tools

The current standard of pre-school and home-school learning based is from the book, verbally, television and also internet. In 1991 the researches that support the multimedia approaches in learning have been conducted. It found that multimedia really help in learning because it can motivates children interaction, give a chance to the students to experience new learning style and also give a better cooperative in learning process. Multimedia also gives an interactive way for the children to variety their own preferable learning [6]. The most important thing is it promotes the overall and easy understanding view of learning.

Multimedia can help for better understanding especially for the children. Multimedia is match with children attraction which it brings a meaning of combination of hardware and software where it allow a person to integrate video, animation, audio, graphics, and test resources to develop an effective presentation. The reading material with additional graphic and illustration can give better learning process for the children [7].

Besides that, children will attract to storytelling which make them fun and exited to learn. The learning program will be built based on storytelling as to make it more fun and bring along children into the practices. Storytelling is fun and exciting approach to catch children's eyes to stay and understand the topic [8]. In addition, the learning program will be in dual language; English and Malay to ease the Malaysian children learn. By doing storytelling, children can understand better even in English by that, it can give good practice to the children to learn English language [9].

2.3 Two-Dimension image (2D) vs. Three-Dimension image (3D)

In order to have interactive edutainment learning style for the early age children, multimedia approaches and additional attractive image can help the children better [10]. Children in today's current world already get introduced and experience the technology as early as 3 years old like playing the computer game.

To adapt with the advance technology, this learning program is conducted with 3D view. It can help children in creativity imagination and help the children in memorizing [11]. Children will recognize and start to memorize the steps and activity in the Clean Healthy living Learning program using this 3D view approach.
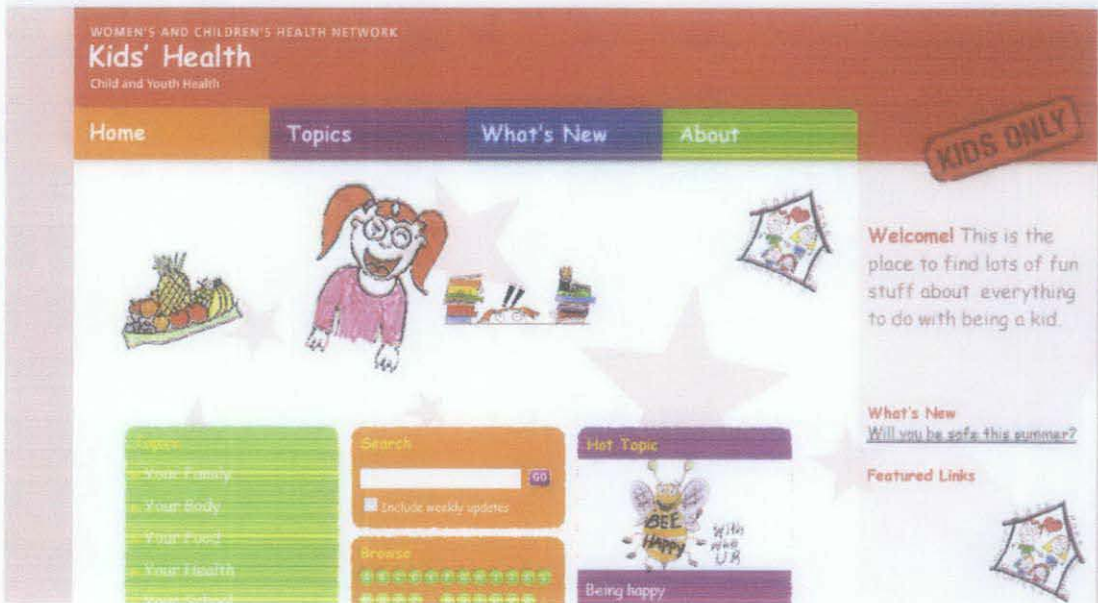
Figure 2.1: Website for kids: http://kidshealth.org/kid/

Figure 2.2: Website for kids: http://www.cyh.com/SubDefault.aspx?p=255

How to exercise for free

1. Climb stairs instead of using lifts or escalators.

2. Walk or ride your bike to wherever you're going (instead of asking mum or dad to drive you).

3. Play games at lunch, recess or after school.

4. Practise skills like running, catching, throwing, kicking, hitting, or bouncing a ball.

5. Walk while you talk with a friend, instead of sitting down talking.

6. Walk or run with the dog (if you haven't got one, borrow one from a neighbour - you might even start a 'walk your dog' business).

7. Take a tape to school and dance during the lunch break. Making up dance or skipping routines is fun!

Figure 2.3: Website for kids:
http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=285&id=1448

Above screenshots are the examples of the most popular website for kids. They are very nice colourful interesting website to be view. Unfortunately what makes children fail to gain information through those medium is the full text of contents inside. Both examples are using the same way to deliver the information by using long text and sentences. This kind of situation make children feels bored and could not fully understand the important information inside. 3D view and video concept would gain better understanding for children rather than long text.

2.4 Learning Theory

Based on Montessori Educational Approach where Dr. Montessori had discovered that children will able to teach themselves. The theory is promote a flexible learning style which the children can choose freely which of the activity they one to try and how long the time they want to learn. The flexibility choice make they enjoy to learn and can engage longer with the learning tools [12].

They elements of Learning Process in the Montessori that support the learning for kids through multimedia approaches with 3D view can help for better understanding. In the Process of Learning in this theory stated that have three stages of learning [13].

1- Introduction to the concept of learning

At this stage children get to gain from the lecture from their teachers, lesson from elder and reading material such as books, internet and others.

2- Processing of The Information

The second stage consists of developing an understanding the concept through experiment.

3- Knowing

The last stage is the processing of an understanding it can be evaluated pass as the children will able to teach another or can express it in good.

This is most of the important stage and it takes longer time because of the children need to explore more and digest the knowledge gained. This the stage where children get to be evaluated either they really get the message and understand the knowledge or not. Children need to have opportunity to have their freedom of choosing and freedom of participate for a better learning process [14] .The first stage of introduce the learning concept need to be used in the interactive an attractive way to make sure children can process the information better and make them understand well.

Children can think differently in different level of age in their lives. Jean Piaget [15] stated that children will have four stages of adaption of learning:

- Sensorimotor stage (birth to 2 years) - In this period, it consist of 6 stages. Intelligence is demonstrated through motor activity without the use of symbols. Knowledge of the world is limited because it's based on physical interactions or experiences. Children acquire object permanence at about 7 months of age (memory). Physical development (mobility) allows the child to begin developing new intellectual abilities.

- Pre-operational stage (2 to 7 years) - In this period, it has two sub-stages, intelligence is demonstrated through the use of symbols, language use matures, and memory and imagination are developed, but thinking is done in a non-logical manner.

- Concrete operational stage (7 to 11 years) - Intelligence is demonstrated through logical and systematic manipulation of symbols related to concrete objects. Operational thinking develops (mental actions that are reversible).

- Formal operating stage (11 and up) - In this stage, intelligence is demonstrated through the logical use of symbols related to abstract concepts.

Based on the research done by Jean Piaget, the most suitable age for the edutainment learning is during the pre-operational stage; ages of 2 to 7 years old. At this level, children learn from symbols, graphic and they are in the stage of understanding the concept of learning and conversation [15]. This is phase of memorizing and imagination developing. This program is targeted to children age from 5 to 7 years old and expected can read a simple sentences and word.

2.5   Clean Healthy Living for Kids in 3D

With the combination of 3D view concept and multimedia would be a better platform for children to learn on clean and healthy living. This learning program will be publishing online. It is flexible where it can be used anytime and anywhere. Children will be captured more knowledge through play [16]. So it is suitable to use internet based where children feel it light learning style which they can view on while surfing the internet.

The program will be designed based on modularity which the children can explore deeply into topic that they preferred. When videos, audio, graphics, have been used, it keeps learners interested and reinforces their skills [17]. Though these methods are exciting and fun, they are will able to catch an eye at the same time, and it makes the children to return to the program again and again. Through continual practice, learning is absorbed and integrated into daily performance. The interactive interface design play the main role as it will be the attraction point for children to learn [18].

Children use to learn what they are like to learn and enjoy it. Sometimes what make they feel like being forced is when the learning style itself is forceful. As example, when parents teach their children to wash hand before and after eating food. But, if the children failed to follow it, parents tend to angry or punish them [19]. Children need to have enjoyable and fun learning to make them easier to adapt and accept the teaching.

This learning program hopefully can improve the children healthy since have many of children around the world suffer on diseases. Based on UNICEF reports, it causes 1.5 million deaths annually worldwide amongst children aged 5 years and below, to the Hand, Foot and Mouth Disease, which affects two children in Malaysia every hour, to the recent influenza pandemic that claimed the lives of 77 individuals in Malaysia last year [20].

CHAPTER 3

METHODOLOGY

3.1   Project Methodology

As far as the project needs, ADDIE model is the most suitable method to be implemented in developing the project because of each of phase used is clear and easy to follow. ADDIE model represent 5 phases of methodology; Analysis, Design, Develop, Implement and lastly Evaluate.

Figure 3.1: ADDIE Model

3.1.1   Analyze

This is the first phase of project methodology. At this phase the project developer analyzed and identified the objectives of the project, the user requirement and goals as well as the resource available to develop the project. This is important phase to make sure the project will be developed on the right track meets the user requirement. At this phase, the project developer had captured the user knowledge and opinion on the project thus a few questions must be address at this phase:

1- What is the current problem?

2- What goals and objectives of the project?

3- Who are the target users?

4- What resources are available for the project?

5- When is the project due?

6- What method could help the learning process?

7- What the most preferable method from parents and teacher for teaching?

The survey like questionnaire and observation has been conducted to collect the data and information needed.

Data collection is to analyze the relevancy of program to be developed.

Data Gathering Technique	Description	Steps involved
Questionnaire	- Had been conducted one-on-one via online. - Can determine what the real performance deficiency is. - 3 types of question had been used (close-ended questions, open-ended questions and probing questions)	- Select population - Design the questions - Prepare for spreading the questionnaire - Conduct the questionnaire - Gather the information
Observation	- Probability sampling – all elements have an equal chance of being selected; the chance of them being selected can be calculated. - Non-probability sampling – selected on availability or researcher's judgement that they are representative	- Select the population - Choose the sample - Start to observe. - Gather the information.

Table 3.1: Data gathering techniques.

Both questionnaire and observation techniques need to have target sample or population. From there it will be easy to narrow the scope and research.

Questionnaire

- Had conducted the questionnaire on parents and teacher opinion about the requirement.
- The questionnaires had been conducted via online.
- The sample was among teacher and also parents.
- Use simple and non technical question.

  Eg:

  Technical : what make your children always get fever?

  Non-technical : do your children doing exercise in the evening?

- Conclude the information to decide the most basic things to be learned by children through the learning program will be developed.

Observation

- In this research, the observation was held among children at age 5 to 7 years old.
- Observed all the situation context, time, date, number of sample, gender, age of sample and so on.
- Observation was held by overview the daily activity and children behaviour in order to get the information in developing the project.

3.1.2 Design

The design phase is contribution from the first phase. The first phase is the process of collecting the information. The design phase is the phase where the information gathered will be used to design the right project. Design phase is like planning the project design. How it will look like include the design and the interface of the project. During this phase, a few important point need to be highlighted;

1- Determine the most appropriate media to be used to develop the project.
2- Design the flow of the project.
3- Identify the resources needed to develop the project.
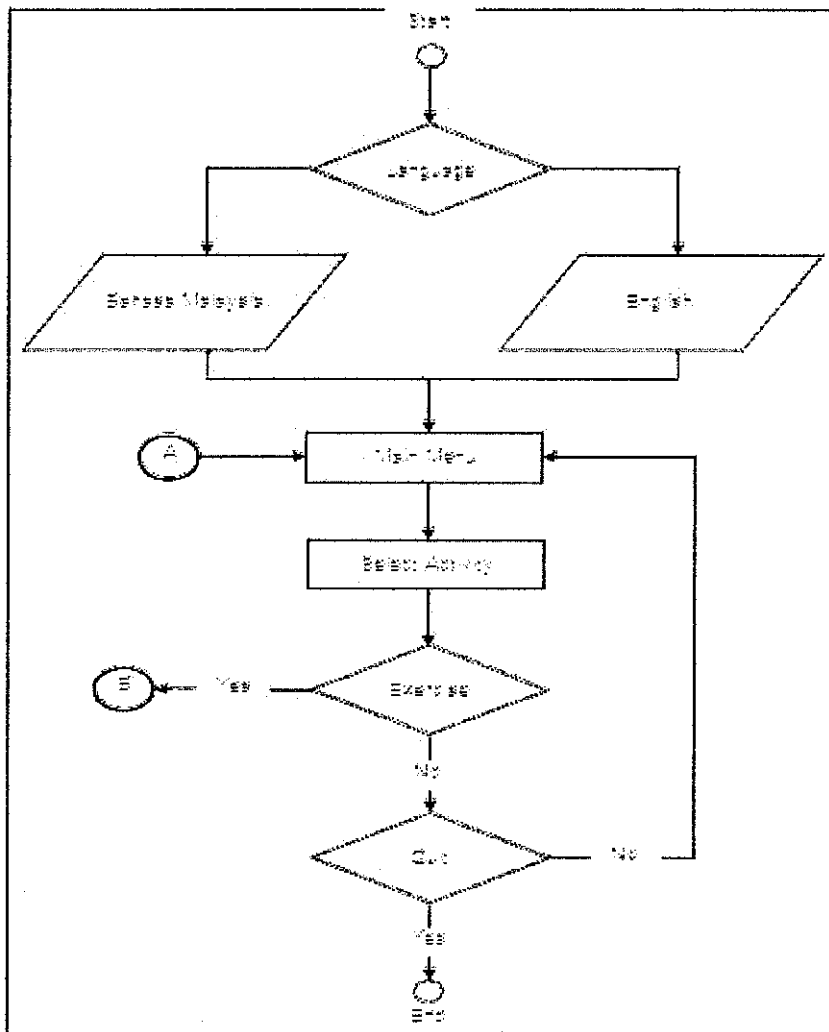
The flows of the prototype function.
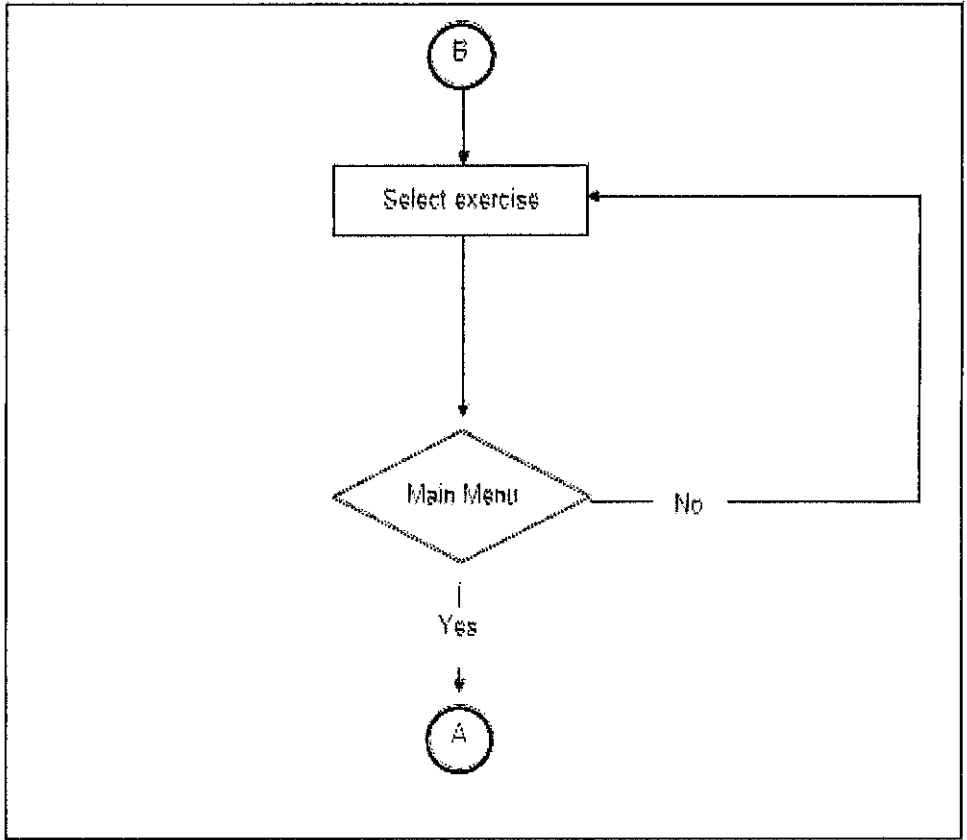

Figure 3.2: Flowchart of project design

16

Figure 3.3: Flowchart of project design; continue

3.1.3 Develop

This is phase where the actual project will be done. The project developer will use the design and continue to develop the project. The developer will work on the project prototype. At this phase the project developer will do the storyboard based on the project design. The prototype of the project will be revised to come out the project in the right way based on user needs. Develop the project is the longest stage where the project developer needs to match and meet the user requirement.

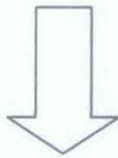**System Development Methodology Interface: Storyboard**

The first page the user will choose the language either Malay or English.
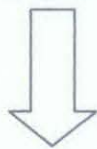
The user will choose the activity that want to learn. The user has to click on the button at the top bar.
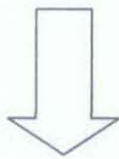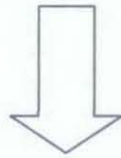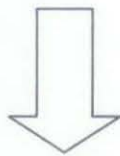
For example, user chooses brush teeth. The step will be viewed in 3D view where the user just clicks on the direction that they want. In this example, user will click on the door.

The user enters the bathroom. User can see the view of the bathroom. User can turn up, left, right and down for viewing. In this example user moves to the sink.

Sink view

Wash basin & Tiles

Then user will click on the hotspot. From there have the video teaching the step to brush teeth.

step of how to brush teeth in the right way

At this step the character will show the correct step. User can learn and follow the step.

Then after finish it, user will move to the next activity or go back to the main menu.

3.1.4 Implement

At this phase, the prototype will be ready to be tested. For this project, the testing has been tested among the kindergarten children and parents. The testing is very important to measure the delivery and acceptance by the user. Any comment from the parents and teacher represent as guidance will be noted to upgrade the learning program

3.1.5 Evaluate

This phase to make sure the project is really good to be used. The users are allowed to leave the rate of the project. Is it really helps them or not. Is it a good program to be used or not. Many question can be asked by the project developer as a survey to know and evaluate how the project done.

3.2   Tools required

Varieties of tools are required in order to develop and build this learning program:

Hardware	Reason of usage
Digital camera	To capture photo
Tripod & fish eye lenses	Allow to capture consistence and wide view photo. This is to enable the ease of stitching the photos together.
Personal computer	Design and develop the prototype

Table 3.2: Hardware used in the project.

Software	Reason of usage
Adobe Photoshop	Editing process
Tourweaver 5.0	Develop the virtual 3D view tour
pixmaker	Stitching still image into 3D panoramic view image

Table 3.3: Software used in the project.

3.3 Gantt Chart

FYP 1

No.	Detail	Week												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Title Selection / Proposal	▓	▓											
2	Confirmation of Proposed Title			X										
3	Preparation of Extended Proposal				▓	▓	▓							
4	Extended Proposal Submission						X							
5	Preparation for Proposal Defense							▓	▓	▓				
6	Proposal Defense and Progress Evaluation									X				
7	Preparation of Interim Report										▓	▓		
8	Interim Report Submission											X		
9	Technical Report												▓	▓
10	Final Submission													X

Legend:
�▓ Progress
X Project Milestone

Table 3.4: Project Timeline for FYP 1

FYP 2

No.	Detail	Week									
		1	2	3	4	5	6	10	11	12	13
1	analyze the user needs	▓	▓								
2	conclude the needs			X							
3	design the prototype				▓	▓	▓	▓	▓		
4	development prototype							▓	▓	▓	▓
5	finish-up prototype										X

Legend:
▓ Progress
X Project Milestone

Table 3.5: Project Timeline for FYP 2

CHAPTER 4
RESULT AND DISCUSSION

Questionnaire has been distributed among 50 parents and teachers in Malaysia. The purpose of the survey by distributing questionnaires is to collect data for the process of analyzing the best result to meet user requirement. The data will be used to come out with better learning program that meet the user needs.

4.1   Background of Respondents

94% of the respondents are in category young adult, range of age from 21 to 35 years old and the other 6% categorized in range of 36 to 5 years old. Most of them are female respondents. It showed that many of them are mother that spending more time with their children. 70% of respondents have below then RM1500 income, 14% income from RM1500 – RM5000 and 16% above RM5000. Lower income respondents showed that they are aware and care on children healthcare even with low household income.
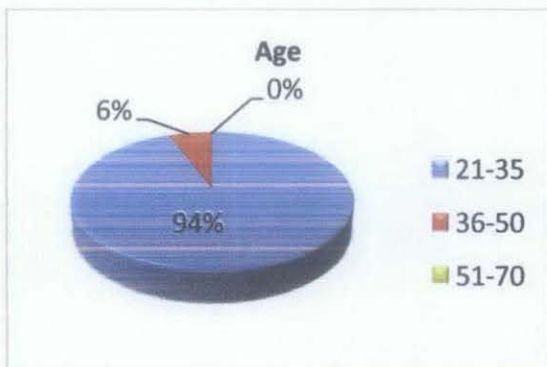

Figure 4.1: Age of respondents.
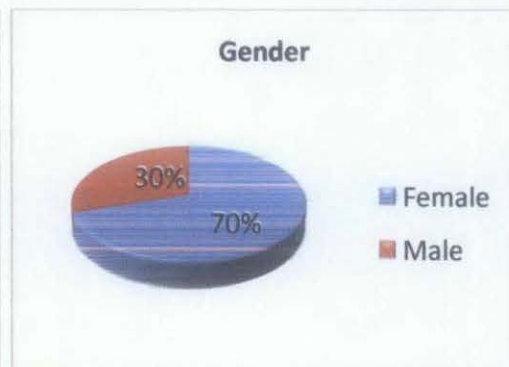
Figure 4.2: Gender of respondents
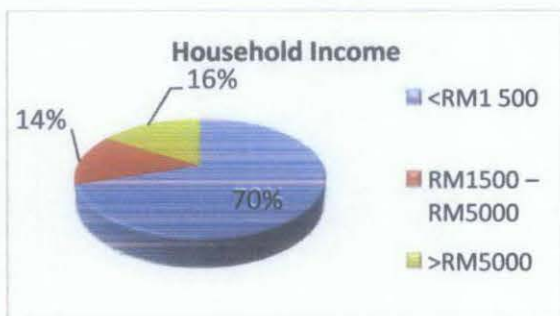
Figure 4.3: Household income of respondents

4.2 Discussion on general opinion

84% of respondents are strongly agreed that clean and healthy living is very important among people. The other 12% and 4% is agree and neutral. The respondents think that clean and healthy living is important and they are agreed that it is better to teach clean and healthy living to the children since at the early age. It is proven by the survey showed 90% of them strongly agreed for children learn clean and healthy living from the early age.
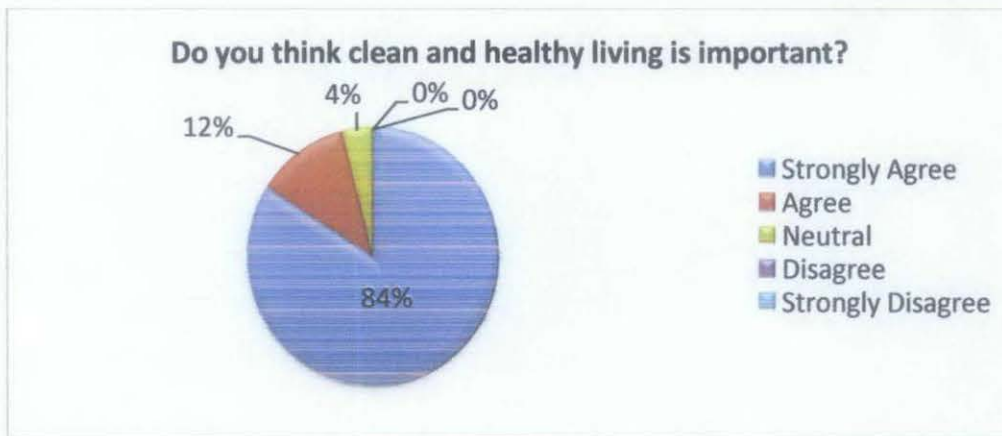
Figure 4.4: Respondents view of important of clean and healthy living.
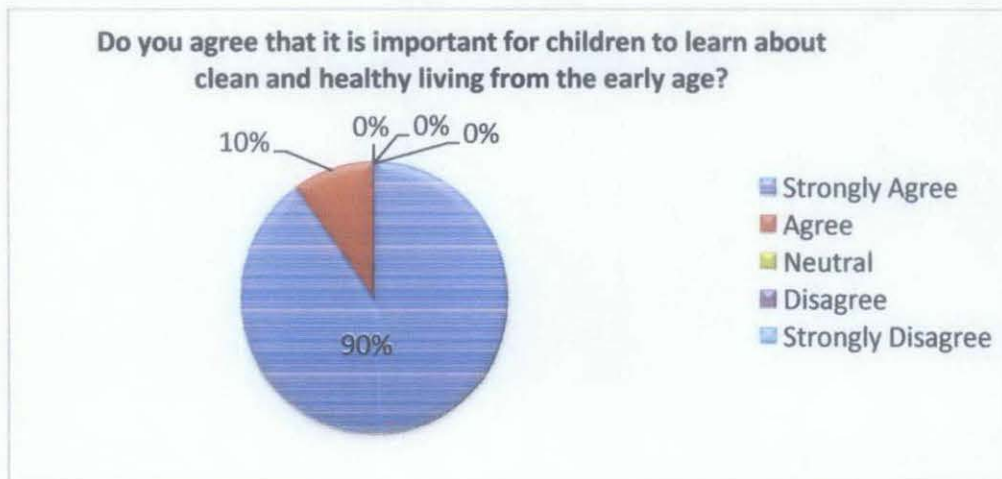
Figure 4.5: Respondents view of how important is children to learn from the early age.

Children are currently not fully practice clean healthy living in the right way. This is agreed by the respondents from the survey. It showed that 54% is neutral think that children is practicing the right way of taking care clean and healthy living. From the result it reflects to the respondents still think that their children still need the other learning tools to help them to teach children on clean and healthy living.
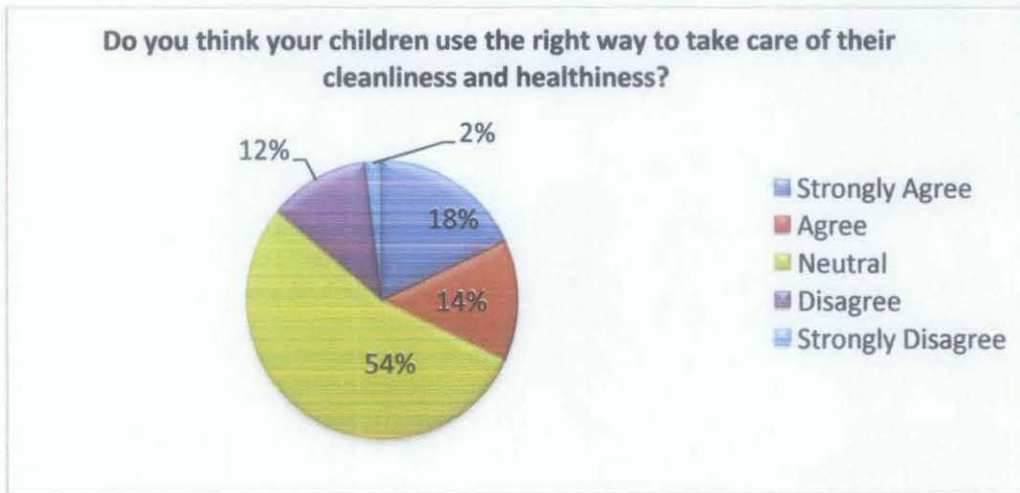
Figure 4.6: Respondents view of the correctness of the children practice clean and healthy living.

4.3   Response from parents and teacher

24% of respondents claimed that they are strongly agreed, 36% agreed and 40% neutral that they are spending specific time with their children to teach on clean and healthy living. This means that parents are aware and take care of their children to teach them from the early age. 40% claimed as neutral which means that they are care on their children clean and healthy but don't have specific time to teach them like in school.

I spare some specific time to teach my children on clean and healthy living.
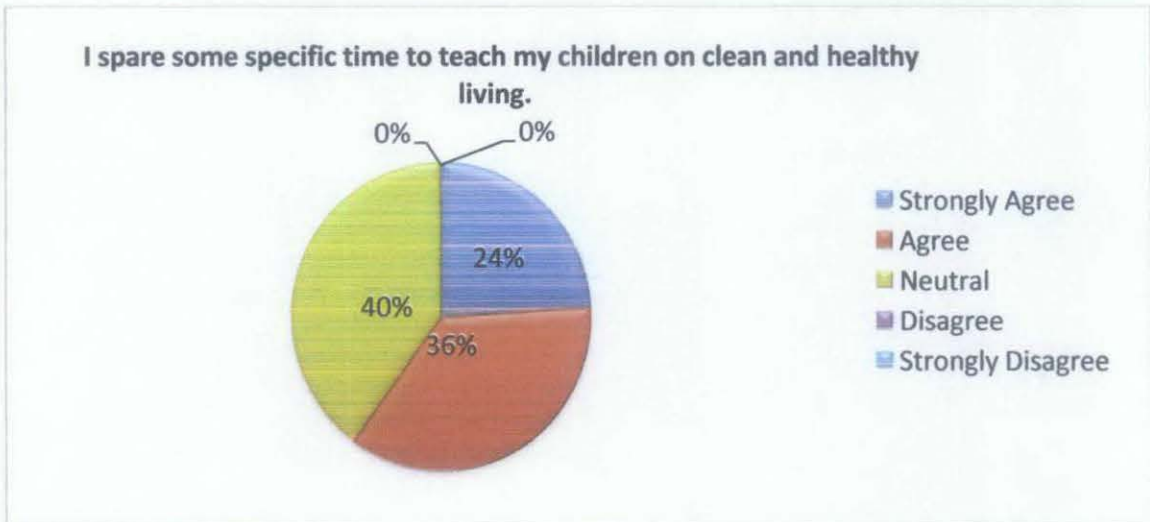
Figure 4.7: responds from respondents on spending specific time to teach clean healthy living to the children.

4.4 Discussions on system requirement
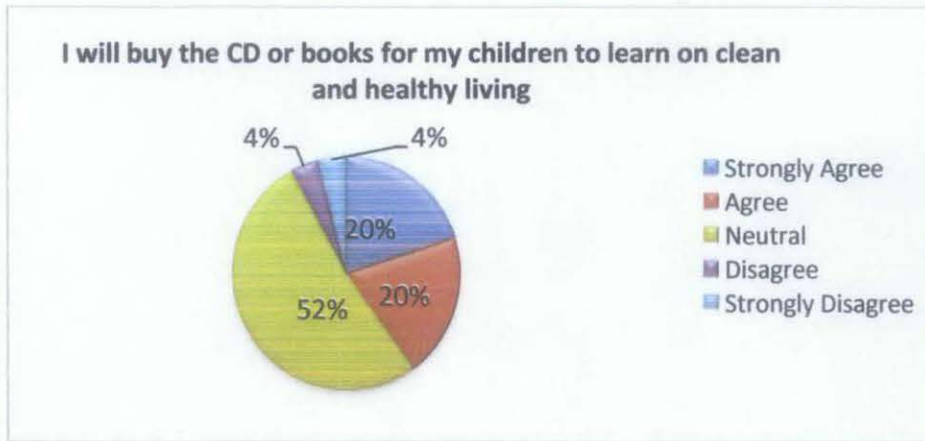
Figure 4.8: Respondent view on buying CD or books
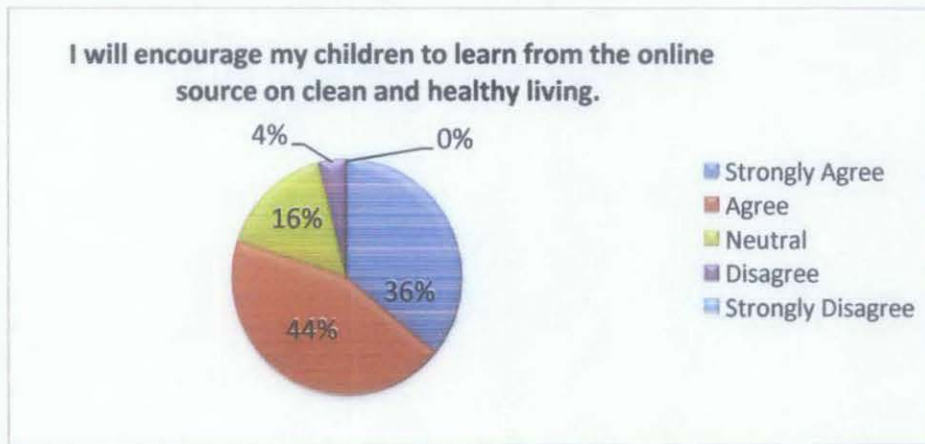
Figure 4.9: Respondent view on encourage children using online source

From the survey, the result from the respondents is positive. The respondents are willing to spend money and encourage the children to learn clean and healthy living. The result showed that 36% strongly agreed their children better to learn via online compare to only 20% strongly agreed to buy CD or books. Its mean that parents and teacher are encourage their children more to learn online.

Based on the result of survey, 32% of respondents are strongly agree, 52% agreed, 12% neutral and only 4% strongly disagree that children love to play online game. From the analysis, average is agreed that children love to play online game. 100% support that children are interest more on computer based compare to book. From the pie chart showed that 32% strongly agreed, 52% agreed and only 16% neutral on opinion that children interest more on computer based learning compare to traditional book learning.

Do you think your children love to play online game?

- 32% — Strongly Agree
- 52% — Agree
- 12% — Neutral
- 0% — Disagree
- 4% — Strongly Disagree

Figure 4.10: Respondent view of online game among children

Do you agree that children interest more on computer based compare to book?

- 32% — Strongly Agree
- 52% — Agree
- 16% — Neutral
- Disagree
- Strongly Disagree
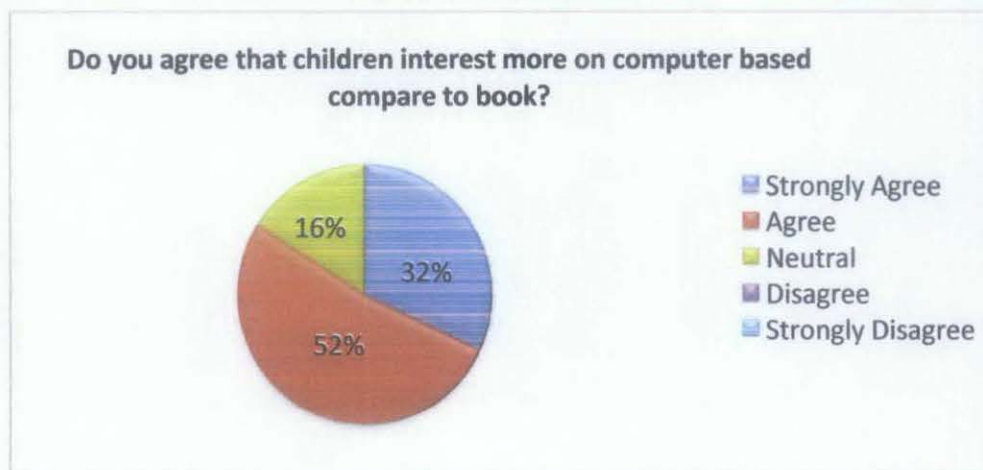
Figure 4.11: Respondent view of computer based learning

The pie chart below showed that respondents support that children need attractive learning tools to teach them how to take care of clean and healthy living. 52% strongly agreed and 44% agreed that children attract more to simulation compare to still picture. 60% agreed, 24% strongly agreed and 16% neutral thinking of children can learn and use the supporting learning tools to learn. Besides, the respondents also agreed that children are more attract to video graphic. From the survey that the learning program of teaching children on clean healthy living is effective more using multimedia approach with attractive video graphic.
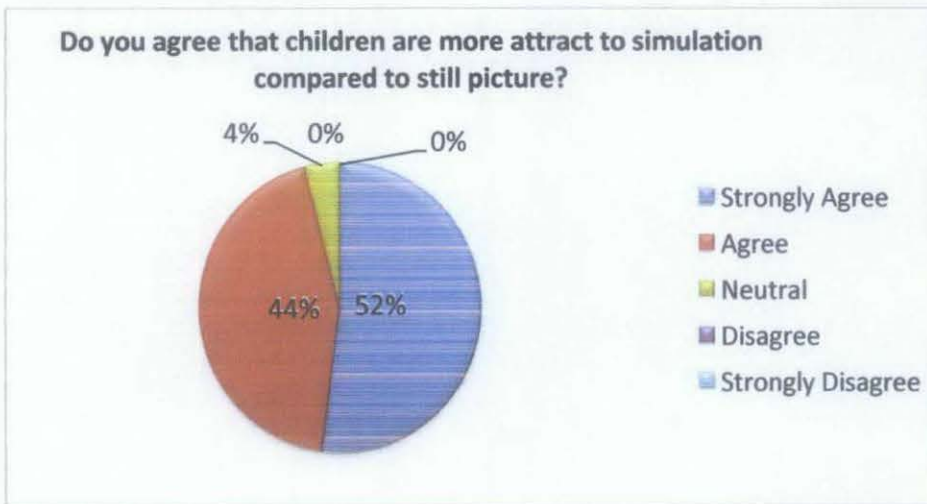
Figure 4.12: Respondent view on children attention to simulation
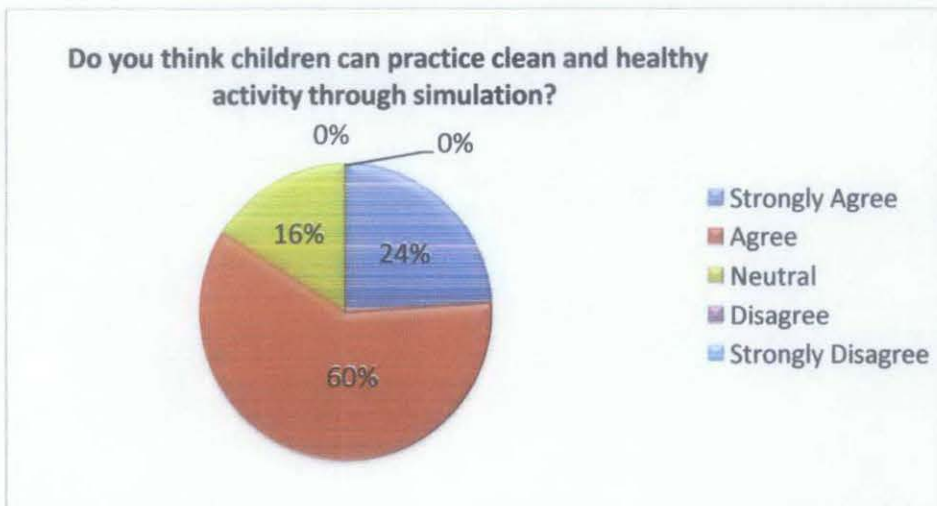
Figure 4.13: Respondent view of children learn from simulation

Do you agree that learning from video graphic can attract the children more than books?

0%   0%
16%
28%
56%

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
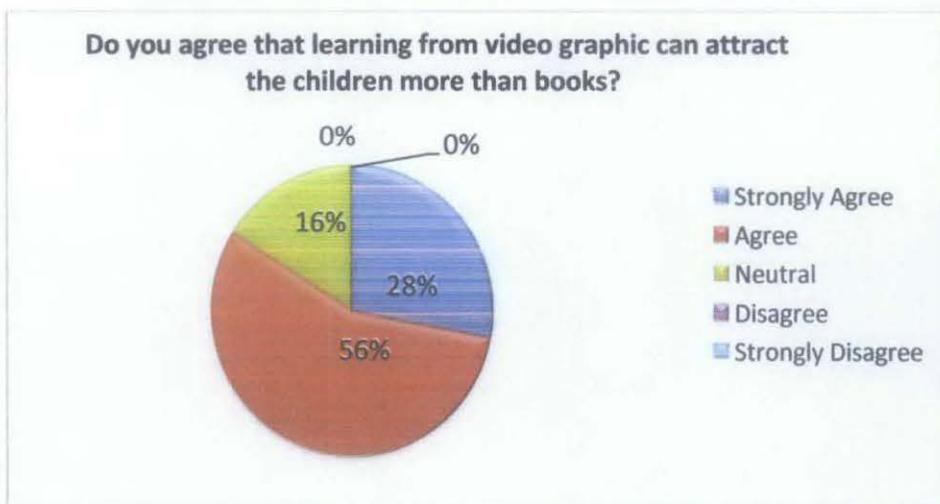
Figure 4.14: Respondent view of children attraction on video graphic

60% of respondents claimed that Malay children have problem in understanding English. The learning tools are suitable be develop in English and Malay language to make it easy to be used by all especially Malay children.

Do you agree that Malay children have problem in understanding English?

0%   0%
20%
20%
60%

Strongly Agree
Agree
Neutral
Disagree
Strongly Disagree
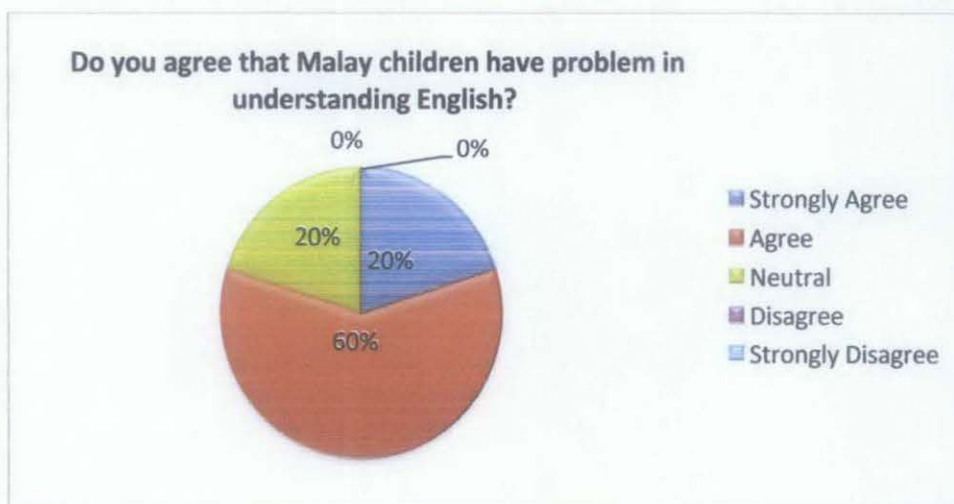
Figure 4.15: Respondent view on understanding English among Malay children

4.5   Recommendation from respondents

To attract the children more, the learning program will be developed with cartoon character where the children love more. Basically, the interface would be in an attractive design, bright and colorful. The cartoon character will motivate the children to memorize the step and the knowledge provided.

Besides that, the respondents point out that the internet based learning program should be in very nice and interesting way to keep the children learn and explore more. So they recommended having game or exercising section to make the children enjoy more on the website. Most of children love to play game. The edutainment way will attract them more.

The respondents also recommended having music background to make children happy and enjoy learning.

4.6   Prototype

The prototype of the project had been done with the choice of theme is Wonderful House which is the prototype bring the user tour around the house. It gives the wonderful experience to the user which it gives 360 degree views around beautiful house.

The reason of developing this type of virtual tour around wonderful house is to make it more interesting and fun in learning. Children will be more exiting to tour around and learn. Along the tour user can see the hotspot button which is when user click on that button there will popup the video of tutorial on clean and healthy living as example, tutorial how to wash their hand correctly.

Below are a few scenes from the prototype. The scene is in the house. User might turn right or left to view the scene. On the scene will put the button where user can click on it to follow the tutorial of clean and healthy living. The tutorial is in video tutorial.

Figure 4.16: Front page

Figure 4.16 is the front page of the website. The developer used colourful and cheerful picture to gain children's attention to explore more on the website. User can choose the preferable language either Malay or English language. This is to keep attraction for Malay children together explore the knowledge which is important for them.

The sign Click to EXPLORE will make children feel exited to explore the beautiful house. Children can learn better through exploration and play [16].

Figure 4.17: first part of the house.

Figure 4.17 is the first scene to be explored which is user can view 360 degree of the scene. Clear instruction also been provided on the right side of the screen. User need to find the hotspot button to explore what activity behind that.

Figure 4.18: upside view.

Figure 4.18 is the view when user drags or clicks the upside of the scene.

Figure 4.19: downside view.

While figure 4.19 is when the user drags the scene to downside or clicks the downside button. Those buttons under the scene also included the sign to make sure user understand the function of buttons. The prototype is avoiding using long and complicated sentence to ease user understanding.

Figure 4.20: hotspot button on the scene.

The hotspot button as in the figure x will bring the user explore the activity behind.
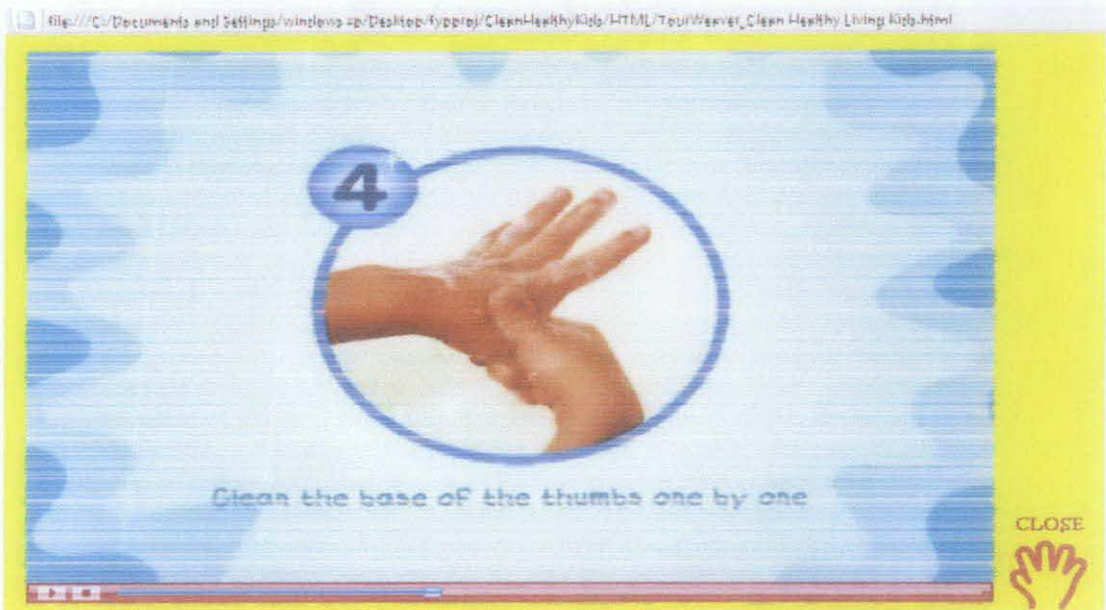
Figure 4.21: video wash hand correctly.

Figure 4.22: video after wake up from sleep.

Figure 4.21 is the screen shot of the video tutorial how to wash hand correctly while figure 4.22 is in Malay version with the video what to do when wake up. User will enjoy the video which is in a way of song includes the lyrics together. Children can sing along while following the tutorial. Children can participate and gain knowledge better with multimedia approach and additional attractive image as the prototype that had been done [10].

Besides that, for Malay children that choosing English language, they can improve their English with the simple lyrics and fun song for learning clean and healthy living. Children will memorize better with fun and enjoyable learning style.

Figure 4.23: living room.

Figure 4.23 is in the other scene inside the house. The radar on the map also changes according to the chosen part in the house. User can just click on the hotspot from the map or thumbnail to move from one part to the other part of the house to explore.

The prototype of the project had been tested to the children 5 to 7 years old. The result as below:

Elements	Rating	Remarks
Interfaces	4	The interfaces can be improved in future works.
Functionality	4	Other new functionalities could be added to the system in the future.
Time to run	5	The courseware does not take long time to run.
Choices of colour	5	The colour could be varied and more attractive in the future.
Icons used	4	There should be more icons with pictures used in future.

4.1 Result for user test

1 = Very dissatisfied   4 = Somewhat satisfied

2 = Somewhat dissatisfied   5 = Very satisfied

3 = Neither satisfied nor dissatisfied

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CHAPTER 5

CONCLUSION and RECOMMENDATION

5.0 Conclusion

Clean healthy living for kids in 3D is rational to be developed due to the response from the parents and teacher. The learning program will be developed using internet based where it is more attractive and effective. The children love to surf internet and they will feel lighter learning style without feel stressful.

3D concept will be the main attraction for the children to explore more on the teaching. Children can view 360 degree of view. It will close to real situation where children can absorb the knowledge better and can apply it.

The new concept of interactive teaching and learning will meet the objective which is to develop fun and enjoyable learning for children. Through meeting up the objective, it is hoped that the learning program will improve the children knowledge and understanding aimed to help the children live healthier and better hygiene.

5.1 Recommendation

Hopefully this informative project for children will be upgrade by using more attractive medium or platform like android. Useful knowledge can deliver better to the respective user if the right platform is chosen.

Virtual tour concept would able to catch children eye to keep with the learning. By then, the teaching will be more attractive by using more happening scene like in the theme park as Genting theme park and so on.

Last but not least, 3D View with the exploration virtual concept will be improve by add some more features like game section.

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This questionnaire is survey for Final Year Project from Universiti Teknologi PETRONAS

Clean Healthy Living for Kids in 3D

A – Demographic: there is no right or wrong answer.

Name

Gender

Age

21-35

36-50

51-70

Household Income

<RM1 500

RM1500 – RM5000

>RM5000

B- General survey: there is no right or wrong answer.

1. Do you think clean and healthy living is important?
2. Do you agree that it is important for children to learn about clean and healthy living from the early age?
3. Do you think your children use the right way to take care of their cleanliness and healthiness?

C- This section is for **parents**: there is no right or wrong answer.

1. Do you think your children love to play online game?
2. I spare some specific time to teach my children on clean and healthy living.
3. I will buy the CD or books for my children to learn on clean and healthy living.
4. I will encourage my children to learn from the online source on clean and healthy living.
5. Do you agree that children interest more on computer based compare to book?

D- This section is for **teachers**: there is no right or wrong answer.

Do you think children love to play online game?

1. Do you agree that children are more attract to simulation compared to still picture?
2. Do you think children can practice clean and healthy activity through simulation?
3. Do you agree that Malay children have problem in understanding English?
4. Do you agree that learning from video graphic can attract the children more than books?

E- Suggestion / Recommendation : You may skip this section.

In your opinion, do you think have any features in terms of graphic or content to attract more the children to learn and practice clean and healthy living?