

ENGLISH SCHOOL MATE
SRI LANKA

Project ID: 2020-069

Project Proposal Report

Shehan D.S

(S.N.S. Divyanjali, H.A.B. Sankalpa, N.G.H. Madushani)

BSc Special (Hons) - Information Technology (Specialization in Computer
Systems and Network Engineering)

Department of Information Technology

Sri Lanka Institute of Information Technology

Sri Lanka

February 2020

ENGLISH SCHOOL MATE
SRI LANKA

Project ID: 2020-069

Project Proposal Report

D.S.Shehan	IT17102056
H.A.B.Sankalpa	IT17155212
S.N.S.Divyanjali	IT17400596
N.G.H.Madushani	IT17027670

Supervisor: Mr Dhammika de Silva

BSc Special (Hons) - Information Technology (Specialization in Computer
Systems and Network Engineering)

Department of Information Technology

Sri Lanka Institute of Information Technology

Sri Lanka

February 2020

DECLARATION

I declare that this is our own work and this proposal does not incorporate without acknowledgement of any material previously submitted for a degree or diploma in any other university or Institute of higher learning and to the best of our knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

Name	IT Number	Signature	Date
Shehan D.S	IT17102056		25/02/2020

Supervisor

Mr. Dhammika de silva

Date

ABSTRACT

Nowadays most people in the world is using English language. And also English is become the international language. Because of above mention reasons, English is very important language. Sri Lankan students also learn English as a subject in their secondary school. But our team did a research about English language learning in Sri Lanka and identify some problems in Sri Lankan learning system. Lack of English teachers in rural areas of Sri Lanka, Lack of educational facilities, bored leaning system are major problem that we identified. Therefore, English School Mate would be the ideal solution to get rid of above mention issues. This proposal report is prepared to propose “Vocabulary Skill improvement and brain improvement game” under the research of “English School Mate”.

Table of Contents

DECLARATION	iii
ABSTRACT	1
1. INTRODUCTION.....	3
1.1 Background Study.....	3
1.2 Literature Review	5
1.3 Research gap	7
1.4 Existing game applications with English learning.....	8
1.5 Research problem.....	10
2. OBJECTIVES.....	11
3. METHODOLOGY.....	12
4. Tools and Technologies	14
4.1 Tools.....	14
4.2 Technologies	14
5. REFERENCES.....	15

1. INTRODUCTION

1.1 Background Study

Nowadays education is become a main human need. Humans need education to success their life. Future world is depending on educated people. Sri Lankan education has a big history over many years. In 1836, government schools were started by British government in Sri Lanka. Sri Lankan education system have two stages [1].

- Primary stage – Nursery stage to grade 5
- Secondary stage – grade 5 to grade 13

Secondary stage students learn many subjects. Math, Science, Sinhala are few subjects. Among them English language is there for secondary stage students. English language is important because it is the international language. People need English to connect with the world. In Sri Lanka the mother tongue is Sinhala language. Because of that students in secondary stage have many difficulties to learn English language like Sinhala language. And in Sri Lanka there are both rural areas and urban areas. Urban areas have good facilities to do education. But in rural areas of the Sri Lanka have few facilities to do education. This is a big problem in Sri Lankan education system. If we talk about learning English language, there are no teachers, no books to learn English in rural areas. And some teachers are not well known about the subject to teach their students. And another fault is the current English learning system is not encouraging the students to learn. Actually, it is very boring system. Our team gather some information from the general public using google form about difficulties in English learning in Sri Lanka.

I. Most people like to use mobile application to learn English

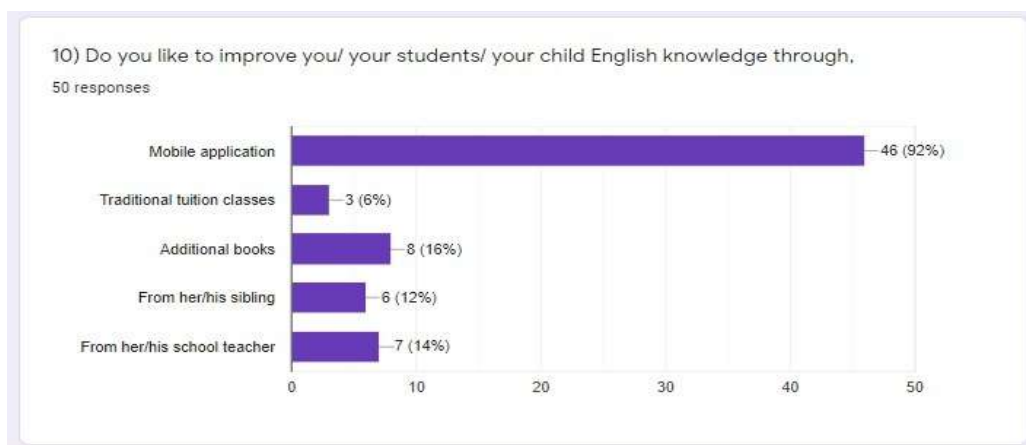


Figure 1: what is your idea about having a mobile application to learn English

II. Most people like to learn English through a video game.

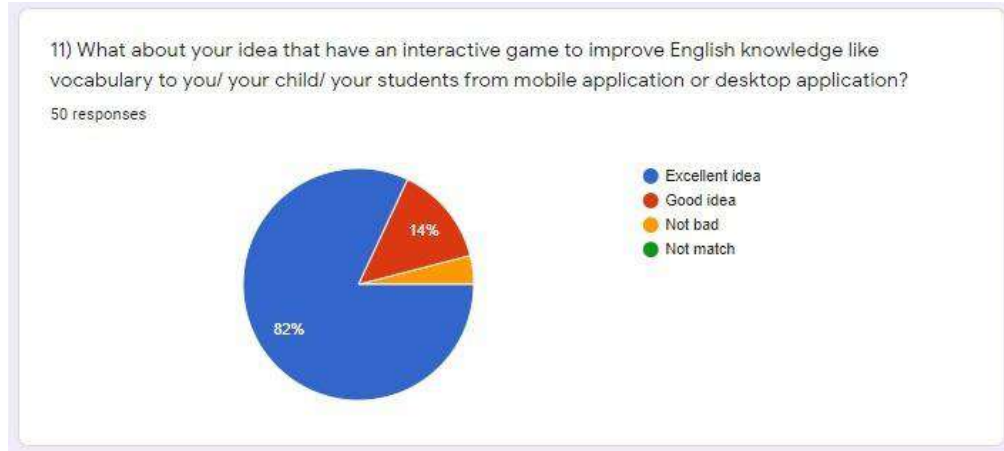


Figure 2: What is your idea about learn English through a video game.

Devices are more friendly with people in modern society and it is very easy to make something memorable in the mind of people with the help of mobile because they always do activities with mobile devices. This research aims to develop an application which provides English learning system. In our proposed system there are four components.

1. Vocabulary skill improvement and brain improvement game.
2. English writing module.
3. Spoken English module.
4. English listening and answering module.

When we consider about Vocabulary skill improvement and brain improvement game, students need an interesting way to improve their vocabulary skills. Here I proposed a way to improve their vocabulary skills and brain improvement through an interesting way. And also through this system I can fulfill their entertainment requirement as well.

1.2 Literature Review

When researching through similar type systems and procedures we found several systems. Even through the target group and the methodologies are different in some research articles.

Tsung-Li Wang, Tin-Kai Chen and Ya-Fen Tseng from Taiwan developed a typing game to learn English through typing. Through that typing game the target group can learn English in many ways. One is vocabulary skill will improve through typing. And they can improve fast typing through this game. And the user can remember huge amount of words from this game. The game based on Learner-centered learning concept (LCL) and mainly based on generic web technology using java and Flash mechanisms. And because this one in web-based system, this system can use to do distance learning [2].

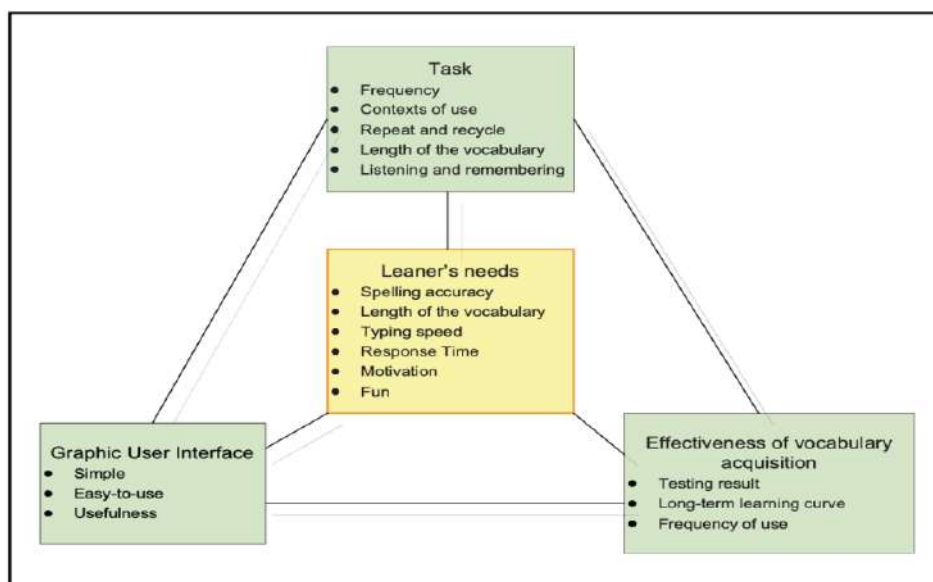


Figure 3: learner- centered learning concept

Researchers Chin-Ming Chen and Yen-Nung Tsai from Taiwan developed a Interactive Location-based Game for supporting to English learning. The took first floor of the National Taiwan Normal University (NTNU) as their game location. Their aim to enhance learners' impressing and interest of learning English and increasing the performance of English learning based on the situational learning approach supported by WLAN positional techniques. As learner log in to the proposed system, the system gives clues using English language and learner should understand those clues and have to go to that location using them. According to the location changes the back picture of the application will change. It changes using Neural Networks. Actually, this is a good game to learn English through location. It's very interesting game [3].

There is another research about Contextual Game for Improving English Vocabulary Learning Performance of Elementary School Students from Taiwan by group of researchers Siang-Yi Wang, Gwo-Jen Hwang and Shan-Feng Chen. In that game they use two question types. There are active questions and passive questions. And the game got missions. The missions lead students to the learning context. Students are free to practice vocabularies and students were asked to entry the required vocabulary to pass the missions. They use RPG Maker XP as the designing tool for the game [4].

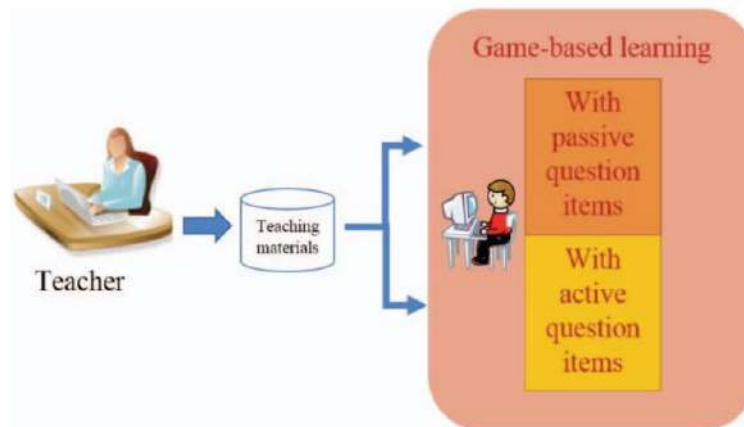


Figure 4: Structure of Learning system of the game

1.3 Research gap

Due to development of technology, over past few years researchers have introduced different kind of mobile applications and web applications to develop English learning abilities. Some applications mainly focused on English learning. But our application is focused on not only the English learning but also entertainment and brain improvement.

Research	Covered areas	Our application covered areas
Typing game to learn English	<ul style="list-style-type: none">• Vocabulary skill improvement.• Distance learning facility.	<ul style="list-style-type: none">• Vocabulary skill improvement through high quality graphical interfaces using the game.• Distance learning facility.• Focus on grade 6 to 9 students.• Brain improvement techniques through the game.
Contextual game for improving English	<ul style="list-style-type: none">• Vocabulary skill improvement.	<ul style="list-style-type: none">• Not only the vocabulary skill but also brain improvement skills through the game.

Table 1: comparison of research paper system

1.4 Existing game applications with English learning

- Dulingo
 - Spelling and reading.
 - More than 100 English words.



Figure 5: Dulingo application.

- Magic land
 - Spelling and reading.
 - English and some other languages.
 - Math (basic addition, subtraction, division)



Figure 6: Magic land application.

- Vocab game.
 - Spelling and reading.



Figure 7: Vocab game application.

Features Application	English learning	Entertainment	Brain-improvement	Thinking ability
Dulingo	✓	✓	✗	✗
Magic Land	✓	✗	✗	✓
Vocab game	✗	✓	✗	✗
Our proposed application	✓	✓	✓	✓

Table 2: Comparison of existing applications

1.5 Research problem

Nowadays English language is become very important language in the world. Because it is the international language. If you know English very well, you can definitely get a good job in a big multi-national company. And English is very important because if we know English, we can communicate with foreigners.

In Sri Lankan secondary school syllabus has English language as a subject. So Sri Lankan students can learn English from their school. But in Sri Lanka there are urban areas with good facilities and also rural areas with less facilities. So our team did a research about rural area English knowledge and urban area English knowledge. Then we found a huge gap between rural English knowledge and urban English knowledge. We identified some reasons for this matter. One reason is in rural areas there are lack of teachers and lack study materials. And other reason that we identified is teachers teach English not in a interesting way.

2. OBJECTIVES

- Vocabulary skill improvement

Improve vocabulary skill through matching images with word activities, and find correct item activities. And give more than 100000 words using interesting activities through the game.

- Brain improvement

Give puzzle activities to brain improvement. Give free rewards to motivate the student to do more activities. Give levels to improve performance.

- Entertainment.

Use good graphical interfaces when making the game. And also add some songs to entertain the students.

- Thinking ability improvement.

Give thinking activities to the student to pass the levels in the game.

3. METHODOLOGY

Proposed vocabulary skill improvement and brain improvement game application is using the iterative and incremental model of Software Development Life Cycle (SDLC). Proposed system chooses to be done using this model because this model does not start with full specification of requirements [5]. In this SDLC model, every step is repeating. So, using this model we can update every step of the process easily.

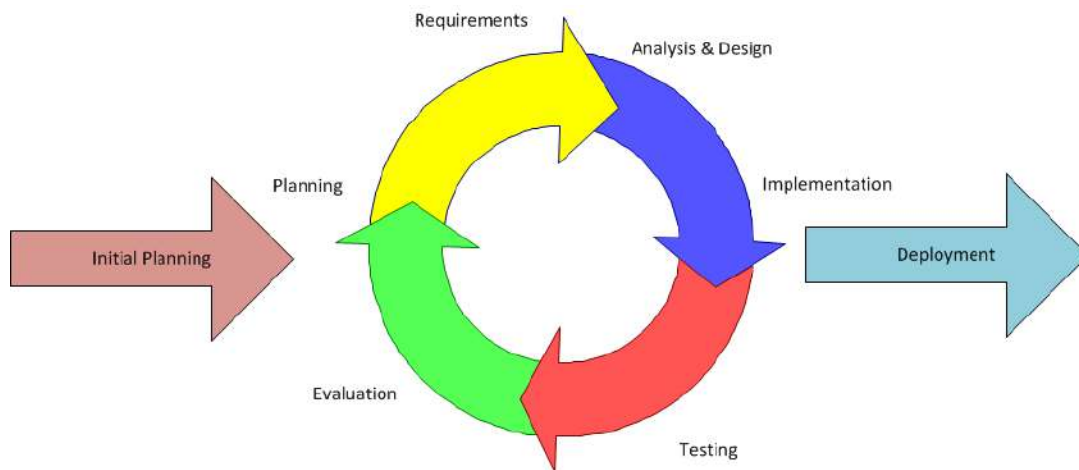


Figure 8: Iterative and incremental SDLC model

Planning

In the planning step, I conduct a research to get information about the system and then did the Literature Survey. From the help of the survey I decided to develop the vocabulary skill improvement and brain improvement game for our English School Mate system.

Requirement gathering

In this requirement gathering step, I gathered information by giving a google forum questionnaire to the students and parents.

Requirement analyzing

Then I did the requirement analysis and requirement specification for the gathered requirements.

Design

In the Design step, I decided to design separate activities to develop the English vocabulary skills, brain improvement, thinking ability and entertainment. There will be several levels which increase the complexity level by level. Students will get easy activity for the first level and it will become complex level by level. The player must complete the first level successfully to move forward. In these levels' player will get more than 100000 words to improve their vocabulary skill. And also, for the vocabulary improvement part I decided to give a activity based on questions. For the brain improvement part, I decided to give puzzle activities to the student. For the puzzle activities there are levels. Student must successfully do the first level to move forward. And there will be a countdown for these levels. If the player will not be able to pass the level within given time, the player will failed pass the level. By using puzzle activity, I decided to achieve the brain improvement part and the thinking ability improvement part.

Implementation

In the implementation step, I decide to implement the game following the iterative and incremental SDLC model which designed in design step, using Unity game engine as a software and C# as a language on android platform. I select unity because Unity has high-quality audio and visual effects supported by the engine to easy the game development [6]. Android is the widely used operating system across the world and it is an open source platform, because of that reason I decided to develop an android application.

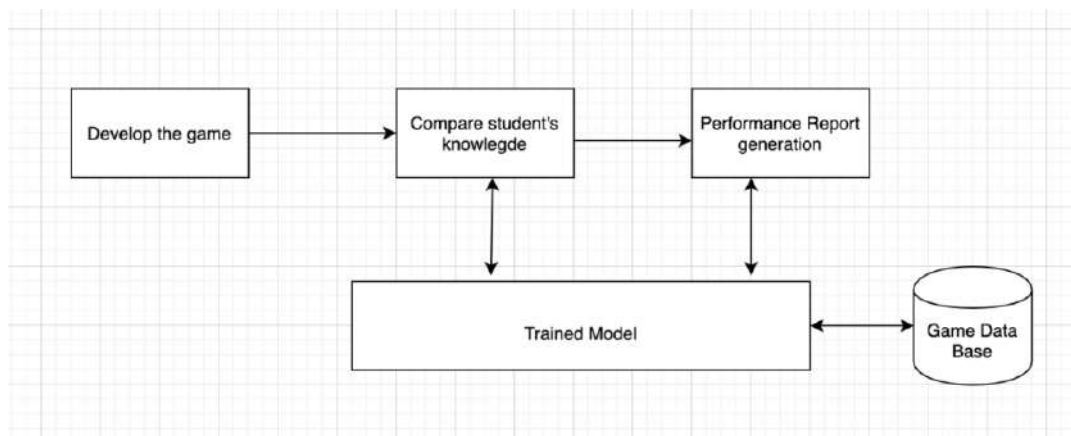


Figure 9: System overview diagram of the game.

Testing

In the testing step, check the game whether it's all functions are working correctly. And also check whether the if there are any bugs in the game.

4. Tools and Technologies

4.1 Tools

- Unity game engine
- Android studio

4.2 Technologies

- Java

5. REFERENCES

- [1] Wikipedia. (2018) Education in sri lanka. [Online]. Available: <http://www.michaelshell.org/tex/ieeetran/>
- [2] Tsung-Li Wang, Tin-Kai Chen, Ya-Fen Tseng “An Leaner-centred, Game-based, Learning Framework for Typing Games in English Course”, 2010 International Symposium on Computer, Communication, Control and Automation, on. IEEE, 2010.
- [3] Chih- Ming Chen, Yen-Nung Tsai , “ Interactive Location-based Game for Supporting Effective English Learning”, 2009 International Conference on Environmental Science and Information Application Technology, on IEEE, 2009
- [4] Siang-Yi Wang, Gwo-Jen Hwang, Shan-Feng Chen “Development of a Contextual Game for Improving English Vocabulary Learning performance of Elementary School Students in Taiwan”, 2015 IIAI 4th International Congress on Advanced Applied Informatics, on IEEE, 2015
- [5] Wikipedia. (2020) Iterative and Incremental development. [Online]. Available: https://en.wikipedia.org/wiki/Iterative_and_incremental_development
- [6] Wikipedia. (2020) Unity (game engine). [online]. Available: [https://en.wikipedia.org/wiki/Unity_\(game_engine\)](https://en.wikipedia.org/wiki/Unity_(game_engine))

