UNIVERSITI TEKNOLGI PETRONAS (UTP)

LEARNING FRENCH LANGUAGE ANDROID MOBILE APPLICATION

By

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Abstract

Learning French language is a mobile application on the Android operating system on smart phones that is designed to assist peoples who love learning French language or businesses or tourist peoples who travel to countries speaking French language, to enhance their knowledge in communicating French language while they are away. As most of people think that French language seem to be difficult to them, by using the device they will not face any problem. And this is one of the things that scared businesses, tourist and others peoples to travel to countries speaking French languages. Today with the development of technology in recent years have spawned a huge number of Android Smartphone users and this is the perfect opportunity to have an application that can help tourists, businesses and others peoples to have the basic of French knowledge. The interactive application enables users learning an experience that is enjoyable and requires practices, which evidently has been successful in teaching people. The difficulty level of the exercises inside the application will be par to the user's practice. Users will be able to participate in this learning experience by solving puzzles or problems. This application will hopefully and will give more interest and appreciation to users towards French language and will make life easier to them.

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Chapter 1:
Project background

1.1 Introduction.

Language is a symbol which it has a meaning that is used by a group of people. Language is a means of communication ideas and plays a big role in the society. It shows the identity and also the idea of belonging to a group of people. There is no person in the world who speaks no language without having any writing skills. Everyone is able to communicate verbally if there is no any physical disability. Some people can speak two or more languages, where some of them are have learned foreign language due to their demographic conditions or required professionalism in their business or study area. However it's not only necessary to learn language in business and study cases, but also you might be required to have a slight knowledge while traveling to the country, where that particular language is mainly spoken. There are different strategies and methods on learning foreign language. Some of them are being learned in class rooms, some are learned online from the desktop with internet connection, and others are learned from various media. However since mobile technology is growing so rapidly these days, everyone tries to transfer their computer needs on mobile devices, which are powerful enough to carry out some of the daily tasks such as e-mail, IM messaging, games, travel maps, educational tools. These days some mobile phones are equipped with double core 1 Gigahertz processors for even faster and more convenient application running. Using mobile applications can be more efficient and effective for most people, because these applications can be used any time of the day or night and anywhere you are.

On the other hand learning French language on mobile application tools, can be used if users are traveling to foreign countries which is widely spoken that particular language, or for their personal knowledge.

1.2 problem statement

The usage of French language is declining in recent days. The reason for this is due to the usage of the English language all over the world, and also the uprising need to learn the English language as a requirement in career development; this has caused people speaking less French language. People find French language is weird and not very interesting, that's probably because it is too hard and there are so many rules with the grammars, pronunciation. : Pronunciation is one of the biggest issues to people when it comes to learning French language. People are accustomed to their local accents, and learning new language can seem like a challenge to them. The accent marks is also one of factor that make the speaking difficult because many people make the letter sound different when they talk. The tricky part is mainly the vowels, with many strange nasal sounds, gives people hard time to master it. It takes long time for people to learn when and how to use verb tenses. Lack of vocabularies makes people cannot use the words in the right ways. Basic French language learner said, they only able to understand the written documents, but neither to understand the speech nor to speak. There are many people in the world cannot speak French because they do not have the opportunity to learn or improve their French skills. The cost of learning French language is high. Some people can't offer the tuition fee. People don't have free time to study French and this is the challenging part. People nowadays like something easy and fast, which mean they can learn French on the go and they didn't need to bring lots of references book only to travel to countries that using French languages as their lingua franca. Just a smart phone is enough to replace the bulky dictionary. People afraid of traveling to countries speaking French because they don't have the basic of the language, and that give less them interest traveling to such countries. Some people took intensive French course, but when they leave the class they don't use it. In some countries speaking French, people get annoyed when you don't at least try to speak the language they are in even the basics of hello, goodbye, and thank you.

1.3 objectives

The main objective of this project is to develop mobile language learning system that will accommodate general needs of every second language learner with improved usability, portability and with followed audio-lingual and communicative competence method.

Meanwhile other objectives of this project are:

- To introduce an alternative method of teaching basic in French language to anyone who travel to countries that using French as their lingua franca.
- To develop an Android application that help user to learn French language and replace the usage of traditional books.
- To bring extra mobility to the user on learning French language by using mobile phone and make learning interesting and easy.
- To minimize learning hours that is usually required for learning certain language by using Audio Lingual Method

1.4 Scope of study

This application will be used by tourists, businesses and every second language learner for French language. As most of tourist and business travel around all the time, the system will be useful and helpful to them. The system can be implemented in any application that has Andrade operating system which will allow users to learn the language directly from any mobile device such as smart phone, tablet. Anyone can interact with the use of the device.The development platform used in this project is the Android Operating System. This is because studies have shown Android is currently the world's most owned smart phones in the market. Ultimately, tourist businesses that owning Android smart phone will be the target market of this product. The basic content of the application is as follows

- Learn Basic Phrases in French
- Learn Common Greeting Phrases in French
- Learn Names of Numbers and Colors
- Learn Names of Objects used in daily life

Chapter 2

Literature review

2.1 Language Learning / Teaching

Language is the method or means of communicating with other human beings either in writing or speaking. Language plays a big role in a society as it portrays identity and sense of belonging to a group of people. It is estimated that there are roughly 6,909 living languages in the world right now (Lewis, 2009). Language learning is defined as learning to use a language. Language learning starts right from birth, when parents start communicating with their newborn. The challenge however, does not lie in learning the first language. Learning a second (or a subsequent number) language is a challenge to any individual as one language differs from another. Furthermore, learning and mastering a second language has proven to be crucial in today's society to elevate careers and communication. People have taken initiatives to attend classes, buy language learning books and even to migrate to other countries to learn about other languages.

For most people, learning a second language depends a lot on their grasp of their first language, or as defined by researchers as learners language. Often, learner uses their first language to make sense out of the second language. Language transfer occurs when learners fall back to their mother tongue to help create and develop their language system. Although, it helps learner to learn new terms out of the second language, learners are prone to be influenced by their mother tongue. For example, Spanish speakers learning English May say "Is raining" rather than "It is raining", leaving out the subject of the sentence. As sentence subjects can be left out in Spanish. Teaching a person a new language will require time and practice as it is, from another point of view, a process of developing a new system in the human brain.

2.2 Mobile Assisted Language Learning

2.2.1 What is Mobile Assisted Language Learning?

Mobile Assisted Language Learning (MALL) is basically language learning on mobile platforms. Mobile platforms are devices that provide mobility to users. According to Chinnery (2006) mobile learning environments might be face-to-face, distance, or online; further, they may be self-paced or calendar-based. Mobile technologies are the latest trend in language pedagogy where teachings are imparted for users who are always on the go and they can access the application anytime and anywhere.

MALL have evolved nowadays from the usage of cassette player that plays recorded audio lessons for language learning to MP3 player that plays a MP3 audio format of podcast that does the same thing. Aside from MALL, other technologies that have been around in language learning are televisions, radios, and personal computers, which are not mobile by any means. These technologies have led the way in language pedagogy where language enthusiast starts to come up with television programs to assist in understanding a particular language. A similar approach is used in radios where in local radio stations, slots were allocated daily to broadcast language teaching section.

Moreover, Subramaniam (n.d.) discussed the ways to use and apply multiple web resources for effective teaching of English Language and Literature. Furthermore, there are suggestions to improve teaching of English Language and Literature by using multimedia as an innovative tool. Moreover, some of the problems encountered while introducing multimedia as a tool for imparting education are also discussed in this paper.

Although the idea of my project is to develop an application to impart teachings on basic French language, a look into dimension of teaching other languages should be considered. Hence in this research paper, I look into the ways multimedia tools are used in teaching English and Literature to students.

Subramaniam also explained the basic needs of multimedia in any teachings. Multimedia is basically the combinations of text, sounds, video, pictures and animation that appear on any display devices. The uses of multimedia in teachings helps to communicate information in a more effective and efficient manner. Moreover, instructions can be delivered better.

One of the main points that I have gathered from the research paper that relates to my project is that the spelling and the pronunciation of the user can be increased by listening the audio part. Exercises provided in learning helps people to improve their vocabularies. Apart from that, Dr. R. Gandhi states that teaching student need visual and auditory impact to get their attention and interest. This particular point is something I need to consider since the target users of my project are tourist, businesses and 2nd language learners.

The last point that must highlight is that any language learning application is more interesting when is implemented in mobile devise, user can carry it with him anywhere he goes.

2.2.2 MALL Technology

Cell (mobile) phones are one of the MALL technologies that have been around for over a decade. The earlier versions of cell phones are not as advanced as the cell phones that we have today. The main usage of a cell phone was to transmit voice calls and also to send out Short Message Service or SMS in short. According to Brown (as cited in Chinnery), one of the first projects using mobile phones in language learning was developed by the Stanford Learning Lab, which explored their use in language learning. This project is a Spanish study program that utilized voice and email with mobile phones. The modules included were vocabulary practice, quizzes, word and phrase translations, and also access to live talking tutors. Moreover, according to Thornton & Houser (as cited in Chinnery, 2006), this tiny screen sizes (of mobile phones) used in this project were deemed “unsuitable for learning new content but effective for review and practice”.

Furthermore, in the earlier days of MALL, SMS played a big role in providing vocabulary instruction to students. Thornton and Houser developed a project to teach English at a Japanese university. Mini-lessons are emailed to students, three times a day. Students get five words per week and were tested biweekly. They are also compared to a group that receives the exact same lesson on the web.

Nowadays, cell phones or mobile phones have more advanced features and capabilities. Smartphones are the mobile phones that functions on a mobile operating system. Google's Android, Apple's iOS, Nokia's Symbian, RIM's Blackberry OS, Microsoft's Windows Phone are the top and most common mobile operating systems that people use today. Core functionalities such as voice call and SMS are still included in smartphones, but with added features, such as Internet browsing, Global Positioning System (GPS) application, Camera, Video and Music player/recorder, etc. Also, mobile phone users can have access to various kinds of application for download from their respective Operating System Company.

Language learning was previously only incorporated with SMS and email function of the phone. Smartphones have allowed the scope of language learning to become wider in this term. Recently, with the high popularity of Foursquare, a social networking application that let users get points for checking in, at any location. The GPS functionality of the phone is used to show user their and nearby locations to check in. According to UNM (n.d.), two Spanish graduate students, Michael Woods and Christi Cobo developed a project to create linguistic landscapes, incorporating it with Foursquare. It contains task such as finding bilingual signs, listening to people communicating and also record their field notes.

With far superior graphic and processor capabilities in smartphones, the display of images and videos are deemed good in comparison to personal computers. The sound quality of smartphones is also better than the old mobile phones and this has led to enormous amount of developers stepping up to build many applications for smartphones. Developers for language learning each have their own target customers, such as the kids, tourists and language enthusiast. The improved (and still improving) specification of video, image and sounds for smartphones promised a good future for applications that assist language learning. People who want to learn a new language needs to keep being interested in learning, especially if they want a mobile learning. Good cartoon character, good quality audio recording and variation in lessons are among the key criteria in keeping user interested in learning, and in the application. Games and exercises must also be fun and meaningful to help learn the language more effectively.

A special type of mobile phones or personal computer, which is the tablet, is also fairly new and has rising popularity all around the world. Samsung Galaxy Tab, iOS' iPad, and Blackberry Playbook are among the examples of popular tabs in the market. It is bigger than smartphones,

but smaller than laptops. This technology functions almost exactly like a smartphone but with wider screens. Similar to the smartphones, a lot of applications have been developed for the tablets that enables user to enjoy wider screen to watch Medias, and to play games with. A lot of language learning applications have also been developed for tablets users.

Before the smartphones and tablets were created, the Internet was the technology that people used for language learning. Emails, which users used to send digital message to another person's email helped a lot in the dissemination of lessons to students. Nowadays, such method is becoming vague, as a lot more interesting and easier approach has been developed to learn using the Internet. A lot of developers created websites that incorporate multimedia and games to impart teachings on language. Some developers also uploaded many textual lessons for users to download and print out. With Macromedia Flash, flash videos and animation which is simple to developed is used a lot to attract users' attention and interest. This has been very beneficial to language learning and with the Internet; users are not limited to just one type of language to learn.

These are some of the technology that are popular and still improving, under Mobile Assisted Language Learning. Some of the existing applications for mobile technology will be discussed in the next section.

2.3 Existing Mobile Application on Language Learning

There are a lot of language learning applications that have been developed for smartphones, tablets and the Internet. Some of these applications even run on all three platforms.

1. Basic Swahili

Figure 1: screenshot of learning basic Swahili app on ipad.

Basic Swahili is Ghanaian language learning apps development team has just released Nkyea Basic Swahili, the first Swahili iPhone and iPad app from their startup, on the Apple App Store. Nkyea Basic Swahili, which sells for $2.99, contains more than 650 essential words and phrases and has been designed to give absolute beginners a general conversational competence in Swahili. This is useful to people who travel Ghana.

Basic Swahili provides a wide array of selection of games and activities to assist user in learning Swahili. Some of the categories available are spellings, plurals, letters, and synonyms. The concept of separating the language into different modules can be applied to my application. And the system is built with some gaming exercise.

Basic Swahili presents the user with 18 lessons of basic grammar and vocabulary. The user can then choose a lesson, listen to the native speaker, read and record, play back and compare with the native speaker. The app also presents you with a quiz after each topic, which means users can reinforce what they learn and earn motivation badges for scoring high marks. This is a very user friendly language learning application; people say "It's really easy to learn Swahili with Basic Swahili." Basic Swahili is targeting four primary markets: Tourists traveling to East Africa, students learning Swahili at a beginner level in school, anybody who has an East African relative or friend and lastly, language enthusiasts.

1. Learn Bahasa Indonesia by Codegent

Learn Bahasa Indonesia by Codegent is an Android application that assists in learning Bahasa Indonesia. The table below list out the pros and cons of this application.

Table 1: **Pros & Cons of Learn Bahasa Indonesia**

Pros	Cons
• Over 800 common words and phrases • High quality audio recorded by native speaker • No internet connection needed • Greetings, General conversation, Numbers, Directions, Places, etc	• Some phrases are incorrect (User review) • Some correction need to be done on the tone at the end of the words/phrases (User review

2. English in a Month

English in a Month is an Android application that assists in learning The English language. The table below list out the pros and cons of this application.

Table 2: Pros and Cons of English in a Month

Pros	Cons
• Lean base basic phrase and basic vocab • High quality audio record by native speaker • Offer exercises for user to practice.	• Some images in the exercises are too small (User review). • Only provide 3 lesson exercises. . Need to purchase full version to unlock all 30 lesson exercises.

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Basically the same as Learn Bahasa Indonesia by Codegent, I should take note of the wide vocabulary and audio to offer to users. Moreover, some users complained that images in the exercises are too small. A good quality image must be utilized in my application

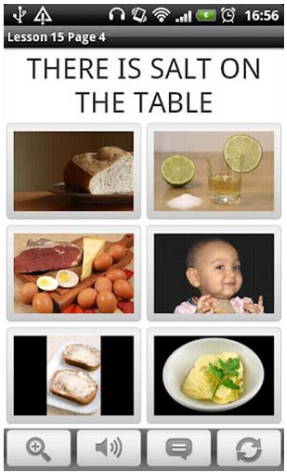

Figure 2: Screenshots of English in a Month

4. Spanish Smash vocabulary game by Native Tongue

Spanish Smash is a Spanish language learning application that is different than other typical language learning application. It is available for both Android smart phones and Apple devices. This application teaches Spanish by using arcade games and there is no usage of flash cards.

Table 3: Pros and Cons of Spanish Smash vocabulary game

Pros	Cons
• Repetition of words through audio recorded by native speakers • The game levels goes faster to make user think faster • Words organized into themed packs (modules) • Developer still updating the application with more modules	• Pay to play • Some users on Android devices experienced glitches and errors using the application.

This application game wasn't free; user has to pay to play the game which is different from what I want to do. My application game is free to user. People might find it intriguing to learn through games and it will be more interesting as speed of answering questions increases by level. These help people to think faster.

Figure 3: Screenshots of Spanish Smash Vocabulary Game

Hello-Hello kids language learning is an animation-enriched application designed to teach vocabulary to users. The developer described the application to assist user in learning English, Spanish, French, German, Italian, Mandarin and Portuguese. The application is available only on the Apple Ipad platform. The table below depicts the application's pros and cons.

Table 4: Pros & Cons of Hello-Hello Kids Language Learning

Pros	Cons
• More than 1 language to learn • Designed for kids, with appropriate usage of graphics, icons, and colors • Easy for user to choose which language they want to learn	• Limited Vocabulary, only have Numbers module (User review) • Not worth the money, as only number learning module is available (User review

Table 5: Comparison Table of Existing Language Learning Application

Application Name	Developer	Pros	Cons	Teaching Method	Training Method
Learn Bahasa Indonesia	Codegent	- many modules - wide vocabulary - HQA recorded by native speakers	- Some phrases are incorrect -no real exercise	Dictionary-like	Listening audio
English In a Month	Learn like Children	- basic and simple phrase & vocabulary - HQA recorded by native speaker	- Some images are too small - Only 3 lesson available. Have to purchase full version to unlock all.	Flashcard	Quiz-like / Listen to audio
Spanish Smash vocabulary game	Native Tongue	- HQA recorded by native speakers - game speed increases with level to make user think faster - Many modules	- Pay to play - Some users on Android devices experienced glitches and errors using the application.	Arcade Game	Arcade Game
Hello-Hello Kids Language learning	Hello-Hello	- Offers many language - Colorful interface	- Only have numbers module - Have to purchase	Flashcard	Hello-Hello Kids Language learning
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2.4 French Language Learning

2.4.1 Background of French Language

French, as it is spoken today by a vast Francophone population, began to become standardized with Charlemagne's conquest of the Gauls and Franks in the 16th Century. The history of the modern French language in France emerged with the combination of Latin and Provençal.

French is used as the official language of 29 countries and is the co-official language of several others, including Belgium, Canada, Haiti, Madagascar, and Switzerland. It is spoken as a first language by 51 million people in France and Corsica; in Canada by 7.2 million; in Belgium by 3.3 million; in Switzerland by 1.2 million; in Monaco by 17,000; in Italy by 100,000; and in the United States by nearly 2 million (primarily in Maine and Louisiana). In sub-Saharan Africa,

some 5 million people (in Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Djibouti, Guinea, Madagascar, Mali, Niger, Rwanda, Senegal, Togo, and Zaire) use French as their principal international language, as do additional millions in Indochina (Vietnam, Laos, Cambodia). In addition, French continues to be spoken as a second language by many people in countries located along the southern and eastern rim of the Mediterranean that were once French colonies or territories (notably Algeria. Morocco and Lebanon).

History of French Language

Modern French belongs to the group of so-called "Romance" languages. Descended from Latin, these languages may be said to represent living shadows of the ancient Roman empire, reflecting the divergent histories of regions formerly unified under Roman rule.

The source of modern French (and of the other Romance languages) was a spoken, popular version of the Latin tongue that was spread abroad by conquering Roman legions – namely, in the case of French, to so-called "Transalpine Gaul" by the armies of Julius Caesar during the century that preceded the birth of Christ.

he invasion of Gaul in the 400's AD by Germanic tribes (including the so-called "Franks") fleeing nomadic attackers from central Asia resulted in a loss of military control by Rome and led to the establishment in of a new, Frankish ruling class whose mother tongue was, of course, not Latin. Their adaptation to the speaking of popular Latin by the indigenous population tended to impose, by authoritative example, a pronunciation that retained a marked Germanic flavor – notably in the vowel sounds that can still be heard in the French of the present day (the modern French "u" and "eu", for instance, remain very close to the modern German "ü" and "ö"– sounds unknown to any other modern language descended from Latin).

The changes in grammar gradually made it harder and harder for speakers of the current language to understand the Latin language still used in Christian religious services and in legal documents. As a result, a written codification of the evolving spoken language was found necessary for current legal and political use. The earliest written documents in a distinctly French

(Francien, from Frankish) language are the so-called "Oaths of Strasbourg", sworn by two of Charlemagne's grandsons in 842 AD

This French language was in fact one of a number of different languages descended from Latin that were spoken in various parts of post-Roman Gaul. Others included notably the so-called "Provençal" language (or langue d'oc); spoken in much of the southern half of what is today metropolitan France. However the so-called "French" language gained a special status resulting from its association with the dominant feudal military power – namely the court of Charlemagne and his successors – whose territorial reach and effective control of French life grew over time.

The return of the French court to Paris – after its move to Aachen (Aix-la-Chapelle) under Charlemagne -- and the ultimate success of its armies against the Anglo-Norman occupiers of major parts of northern and southwestern France, led to a territorial consolidation that guaranteed the future position of "French" as the official language of a centralized monarchy (later nation-state). French was so established by the Edict of Villers-Cotterêts in the year 1539.

The poetic fertility of medieval Provençal, meanwhile, which had far surpassed that of French, in the so-called "Troubadour" period, now gave way to the literary productivity of the language of the central court and central institutions of justice and learning – the language of Paris and the surrounding Ile-de-France region.

The grammar of the French language spoken and written today is in its essentials unchanged from the late 17th century, when official efforts to standardize, stabilize, and clarify French grammatical usage were institutionalized in the French Academy. The purpose of this standardization was political: to facilitate the extension of the court's influence and to smooth the processes of law, administration, and commerce throughout and even beyond the territory of France, as colonial ventures (as far away as India and Louisiana) opened new theaters of imperial growth.

Even today, after the decline of French imperial influence, post-World War II, French remains the second language of a vast "Francophone" population extending far beyond France's remaining overseas territories and dependencies (French Guiana, Martinique, Guadeloupe, St.-

Pierre and Miquelon, New Caledonia, Vanuatu, Tahiti, Seychelles, Mauritius, and Reunion Island).

French in Canada

The French spoken in Canada today, principally in the Province of Quebec, differs from standard modern French as a consequence of Quebec's political isolation from France after the defeat of French colonial armies by British forces in the Battle of Montreal during the so-called French and Indian War (also called the Seven Years' War) (1756-1763).

The influence of English on the vocabulary and syntax of Québecquois French has been massive, especially since the introduction of radio and television. Pronunciation differences relative to Parisian French are explained also by the primarily French-Atlantic-coastal origins (largely rural) of many of the 17th-century French colonists of Quebec, whose mother tongue was a non-Parisian dialect of French.

2.4.2 Previous methods of teaching French language

Furthermore, a study of the previous methods of teaching French is needed to identify effective and ineffective teachings.

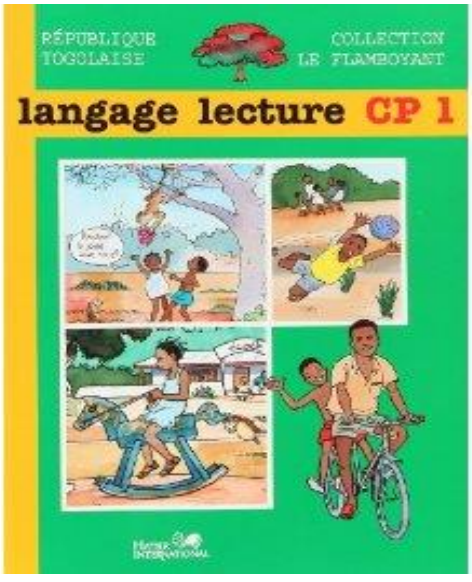


Figure4: previous method of teaching French language

The figure above shows that the previous methods used in teaching French language. The picture on the top left is a reading called “language lecture” is a primary school book published in 1999 in Republic of Togo.

The picture on the top right side is a primary school reading book called “mamadou and Bineta” published in 1975 in Congo for African school. It was the first reading book that was made and published in Africa. Because before all the French learning book came from France.

The bottom left is a conjugation book published in 1995 by Cultural Association in Republic of Cameroon. This is one of the earlier editions of conjugation. The before that center Africa schools have has ever published French books mainly for students. And this poch conjugation has proved to be effective companions in studying for many students. This is because upon stumbling words that are unfamiliar, referring to book not only assist in providing the meaning, the pronunciations are also provided.

The bottom right picture is a story book. The author Ake Loba. The book tells a lot of stories. This book was published by the African Language Foundation. A lot more books are available in central African bookstore and Europe. This type of book helps students to not only read in French but learn valuable lessons on life through the stories.

All of the methods/tools used that are stated here are not depreciated. They are still widely used today. In fact, the significance of this project is to instill learning alternatives by using the latest technologies.

2.5 Discussion / Reflection

Deducing from the various research made, Learning French language that will run on Android operating system is a great idea and hopefully effective in assisting French language learning to people. An application that is targeted for tourists and businesses people will need to be effective and interactive to attract user attention and to retain their interest.

There are a lot of factors to be considered in order for the application to be successful. The choice of multimedia such as sound effects, music, graphics and games need to be precise as the users for this application are tourists and business people. Furthermore, the intermediate language used needs to be correct, in this case, it is the English language. The design of each of the pages or screens needs to be simple and concise. Previous similar applications needs to be analyzed and criteria that are identified to be critical in building an effective application should be included in this application too.

From the comparison table in the previous section, I have found five different language learning applications that are available on the Web, Android smartphones and also Apple's Ipad, namely Learn Bahasa Indonesia, English in a month, Spanish Splash vocabulary game, Hello Hello Kids Language Learning. Three out of four of these applications used Flashcards as the teaching method for their lessons module. Flashcards are effective ways to learn and recall new words. The simple design of flashcard, which displayed a picture of an object (or term) and also the word underneath it. Flashcard is definitely a good teaching method that I can use to develop my training modules. Moreover, for my exercise or training modules, I will develop simple logic games to be incorporating the picture from the flash cards to test users' memory and understanding. In my opinion, it is better to implement game-based exercise to keep users

interested and satisfied while learning as well. Other than that, I will also create quizzes in addition to the games to create variation on training methods. Since, most of the cons in those previous applications have been user complaining on prices to pay for the application, I will have my working prototype and finished application up for free for download for user to test it out later on. The content of the application also must be correct as some of the language speakers have downloaded the previous applications and commented that the terms and grammar of the language have been wrongly used.

Audio recordings from native speakers are also good ideas to be implemented in this project. This is because listening to the native speakers will help user to listen to the way to speak the language in the correct intonation.

Chapter 3

Methodology

3.1 Research Methodology

The methodology chosen for this project is Rapid Application Development (RAD). This methodology is chosen due to the time constrain of this project, which in total is less than 10 months, which is very short. This project requires a rapid prototyping which will involves methods of development and software prototyping. Apart from that, this project is also a data-driven information project where it requires data as the input in order to generate results.

This methodology is also chosen due to any possibilities of functionalities and performance compromising in order to allows a faster development process. The benefits of using this methodology is that it allows any modifications to be made during the development phase if there is a need to review and recheck at any other phase of project development. This is

important as it provides flexibility throughout completing the project such as debugging process. Under this methodology, the whole project will be divided into four main phase such as below.

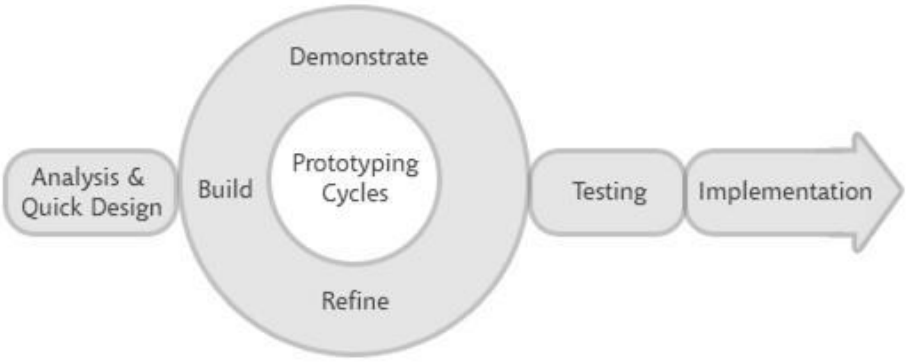


Figure 5: Rapid application development structure

- Analysis and Quick Design Phase
- Prototyping Cycles (Building, Refining, and Demonstrating process)
- Testing Phase
- Implementation Phase

3.1.1 Development Tools

Basic tools needed in order to complete this project are :

- Hardware
    - Personal Computer for Coding
    - Android device (smartphone) for testing purposes.
- Software
    - JDK 1.6
    - Eclipse IDE 3.7
    - Android SDK

3.2 Research Methodology

This project deals with the learning of language. I need to be able to have access to reading materials, such as articles, research papers, books and etc to be able to understand more on my topic. I will choose several people, inside and outside my family circle to enquire about accuracy and authentic of the terminologies that I may use inside my application. Since my referrals are all in tourist and businesses people, my only option of communicating with them would be through online tools such as emails and also telephone calls. I will also contact the French cultural center FCC in my country teaching to get advices on developing this application as this center has been publishing books and media for students to learn French before.

3.2.1 1st Stage: Project Planning

Project planning involves identifying the problem statement and listing out objectives for the project. It is also the phase of identifying the project scope which includes the target user, proposed development platform, and feasibility of the project.

3.2.2 2nd Stage: Literature review

Performing literature review is to analyze previous study on the topic, in this case, French language learning; previous study on other language learning tools, and analyzing similar existing applications. This is to come out with a proper outline for the project development, including the application content (modules) and also the user interface. Literature review helps to list out the strengths and weaknesses of previous language learning tools and also existing mobile language learning application.

3.2.3 3rd Stage: Data Gathering and Analysis

In this phase, the correctness of the French vocabulary in terms of spellings and usage in the correct context and situation is analyzed. To develop the modules for the application, I have listed out the desired modules to be included in the application:

- Learn Basic Phrases in French
- Learn Names of Numbers
- Learn Names of Colors
- Learn Names of Animals

The correctness of the term will be cross-checked with a French dictionary.

3.2.4 4th Stage: Determining the Main Components of the application

The fourth phase of the research methodology is to determine the main component of the system. Learning French for people will mainly have two major components, which are, lessons and exercises for each modules.

3.2.5 5th Stage: Developing System Architecture

The fifth stage in the research methodology will be to develop the system architecture. This is to outline a clear picture of how the application will function. Basically, the users will choose a module and get the option to choose ‘Lesson’ or ‘Exercise’ to either view the lesson or try out the exercise, respectively.

3.2.6 6th Stage: Sketching the Interface of the System

The last step will be to design the application interface. This is to provide a clear view of how each of the pages will look like, as well as to assist in the development aspect of the project. The sketches will make it easier for me to refer to the position each button, wordings, and image in each page during the development phase. The correct labeling of colors is also an important aspect in sketching the interface.

Figure below summarize the research methodology.

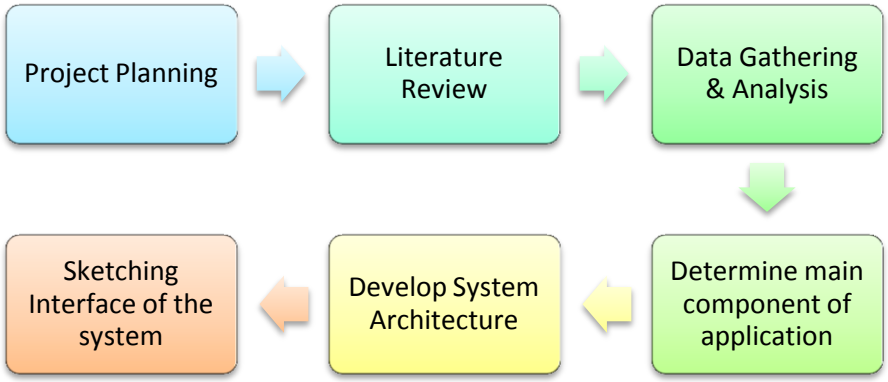


Figure 6: Research Methodology

3.3 Project Activities

As mentioned in the section 3.1, the main project phases of activities (development) will be divided into four sections which are:

- Analysis and Quick Design Phase
- Prototyping Cycles (Building, Refining, and Demonstrating process)
- Testing Phase
- Implementation Phase

Analysis and Quick Design Phase

In this stage, basic early interface and also the system architecture is designed to help guide the development process. For the analysis part, designs from existing applications are analyzed and taken into consideration. The functionalities of buttons, 'On Click' and 'On Touch' listener on buttons are also analyzed, in the sense that what happens before a button or the screen is clicked and touched, and also what are the changes that occurs after the click and touch events.

The analysis also consists of analyzing the usage of suitable colors and contents. Since the target users of this application will be tourists and businesses it is important to design the interface with association to user need. Bright colors will be used, and also the content for each of the module,

will be associated with the level of knowledge that the users currently have. This means, that the object used in the lesson activity have to be identifiable by the user.

This project will also incorporate the usage of background music and the sound of words pronunciation. The choice of correct background music and voice for the pronunciation will also be crucial in keeping the user interested in using the application.

Prototyping Cycles

This is basically then development phase where coding and self-testing is done based on the design done in earlier stage. The development platform as described in the scope of the project in Chapter 1 is the Android operating system. This application will be developed using the Eclipse software with the Android Software Development Kit (SDK) and additional Android Development Tools (ADT).

Eclipse allow user to configure the Extensible Markup Language (XML) file using a graphical user interface, which allows user to not solely depend on codes to set up the layout of a screen/page. The XML file or the layout of each page will be designed first using the graphical user interface, before coding out the activity to carry out with the layout.

Throughout the development process, the current design and activities will be tested on two Android devices, which are Samsung Galaxy Y and Samsung Galaxy W. These two phones have different screen size and resolution, which means that both have different density per pixel intensity (dpi). Hence, it is important to test the application on both devices to check whether there is any error occurring.

Testing Phase

The testing phase is done when the application is done or when some modules inside the application is needed to be tested out before the development can progress. This is done by distributing the Android application package file (APK) which is the application installer inside

an Android device. During this process, it is important that the device that installs the application is at least running Application Programming Interface (API) of level 8. This is to ensure that there will be no issue on the interface of the application, when it is installed.

After the users have installed and used the application, they will be required to fill out a System Usability Scale questionnaire, which is a type of usability test, and also to fill out a user perception survey. These questionnaire will be hosted online using Google Drive, to enable easy access to the responses. The results will be recorded for analysis.

Implementation

In this stage, the application is usually released into the market to distribute/sell. But for the purpose of this project, the application will not be released anywhere as it is only a prototype still, and will be up for evaluation from the respective parties. The application will be previewed using a high density per pixel (high dpi) device, which is a device that has 480 x 800 screen resolutions.

3.4 Gantt chart

Table 6: Gantt of FYP 1

No.	Detail/Week	1	2	3	4	5	6	7		8	9	10	11	12
1	Selection of project topic													
2	Literature review													
3	Research, Defining Problem Statement, Data Gathering and Analysis								Mid-semester Break					
4	Submission of Extended Proposal													
5	FYP1 Lectures													
6	Proposal Defence													
7	Submission of Interim Report													

Table 8: Gantt chart for FYP2

No.	Detail/Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Implementation & Development														
2	System Testing														
3	Submission of Progress Report														
4	Pre-EDX														
5	Dissertation														
6	Viva: Oral Presentation														
7	Final Dissertation														

3.5 Key Milestones

The key milestones for the project are depicted in the table below:

Table 7: key Milestones for FYP1

FYP 1 activities	Dates
Title Selection	Week 1
Regular Meeting with Supervisor	Week1 -14
FYP briefing	19th September
Proposal Submission to Research Cluster	8thOctober Monday
FYP1 Research Class "Data Collection Methods, Sampling, Data Analysis"	23th October
FYP1 Research Class "Report Writing"	31th October
Submission of Extended Proposal to Supervisor	19th November
FYP1 Research Class "E-Resources"	

Table 10: Key Milestones for FYP 2

FYP2 Activities	Date
Implementation & System Development	Week 1-12
Regular Meeting with Supervisor	Week 1- 12
Submission of Progress Report	10th Oct, Wed
Dissertation	26th Nov, Mon
Pre-Sedex	28th Nov, Wed
Viva	5th Dec, Wed
Dissertation Final	19th Dec, Wed

CHAPTER 4

RESULT & DISCUSSION

In this section, the results from the methodology section are displayed. In the data gathering and analysis phase, I have looked up on a French dictionary to find the exact term that I will use in developing the application. Moreover, there are two main components in this application, which are Lesson and Exercise components. The sketching of both the basic system architecture and mock user interface are also displayed in this section.

4.1 Data Mining Results: English – French words

Prior to developing the application, the vocabulary of the proposed module must be gathered from correct and reliable sources. The French words that is included in Learning French for people, covers only the basic words and phrases that are a part of

the French language. The words are translated through a French-English-French dictionary, and cross-checked of its validity with French native speakers. The words gathered are depicted in the following tables, according to its module.

a) Numbers

Number/ Nombre		
Digit	English	French
1	One	Un
2	Two	Deux
3	Three	Trois
4	Four	Quatre
5	Five	Cinq
6	Six	Siz
7	Seven	Sept
8	Eight	Huit
9	Nine	Neuf
10	Ten	dix

Table 8: French words for number modules

b) Basic color

Colors / Couleur		
color	**English**	**French**
	Red	**Rouge**
	Blue	**Bleu**
	Black	**Noir**
	Yellow	**Jaune**
	White	**Blanc**
	Green	**vert**
	Brown	**Marron**

Figure: 7 French words for color module.

C) Basic phrases.

English	French
Hello	Salut
Good morning	Bonjour
Good afternoon	Bonne après midi
Good evening	Bonsoir
Good night	Bonne nuit
Happy birthday	Bonne anniversaire
Thanks	Merci
You are welcome	Pas de quoi
Sorry	Desoler
Good bye	Aurevoir

Figure 8: French words basic phrases model

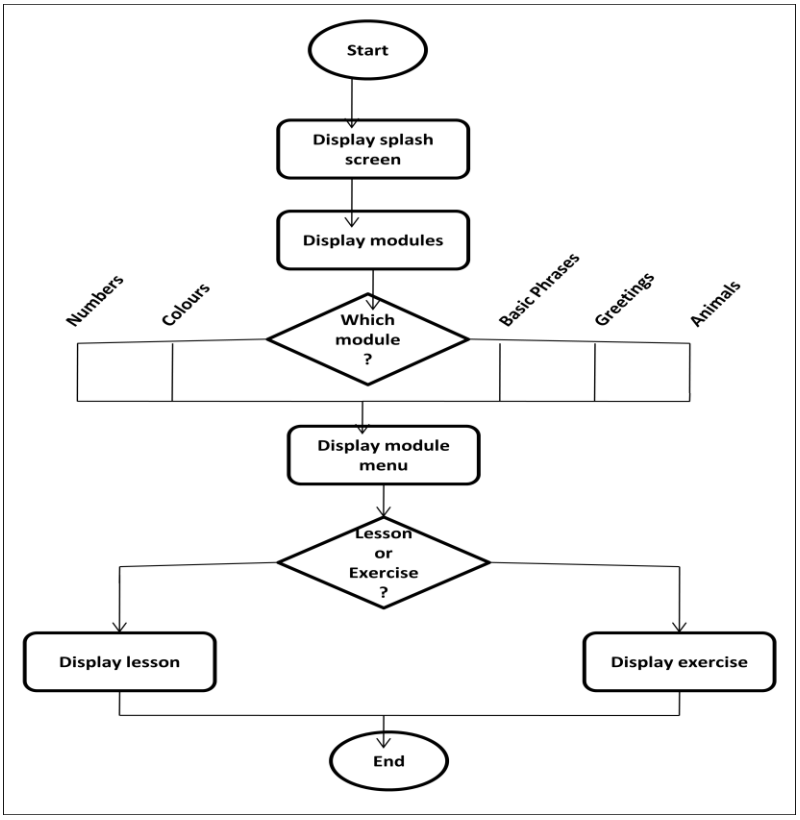
c) Animals

Animals/ Animaux	
English	**French**
Chicken	**Poule**
Dog	**Chien**
Bird	**Oiseau**
Cow	**Vach**
Squirrel	**Equireil**
Snake	**Vipeur**
Duck	**Canard**
Cat	**Chat**
Buffalo	**Buffle**
Sheep	**Mouton**
Tortoise	**Tortue de mer**
Fish	**Poisson**

Horse	**Sheval**
Pig	**Porc**
Goat	**Shevre**
Turtle	**Tortue**

Figure 9: French words animals modules

4.2 Application flowchart



4.3 Prototype

The application works on Android operating system with minimum API level of 8. This means, only smartphones running Android 2.2 and above can run the application without any issue.

Once the launcher icon from the application list is clicked, the application starts with the splash screen. After the splash screen is done, user will see the Home screen or the Menu screen. This is where user gets to choose the module they want to learn. They can choose Numbers, Colours, Animals, or Basic Phrases module.

Figure 10: Launcher icon (enlarged)

Figure 11: Screenshot of the Splash screen and Menu screen

Each time a module is selected, the user will see another selection screen where they will choose an activity to do, whether it is Lesson or Exercise. The selection screen is depicted as shown below.

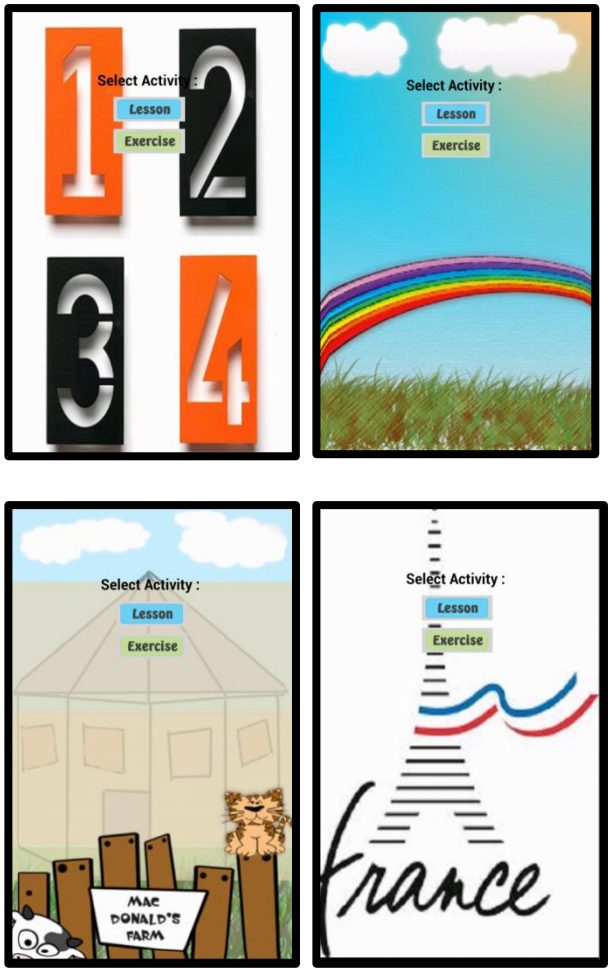


Figure 12: Screenshots of Number, Colour, Animal, Phrase module selection screen

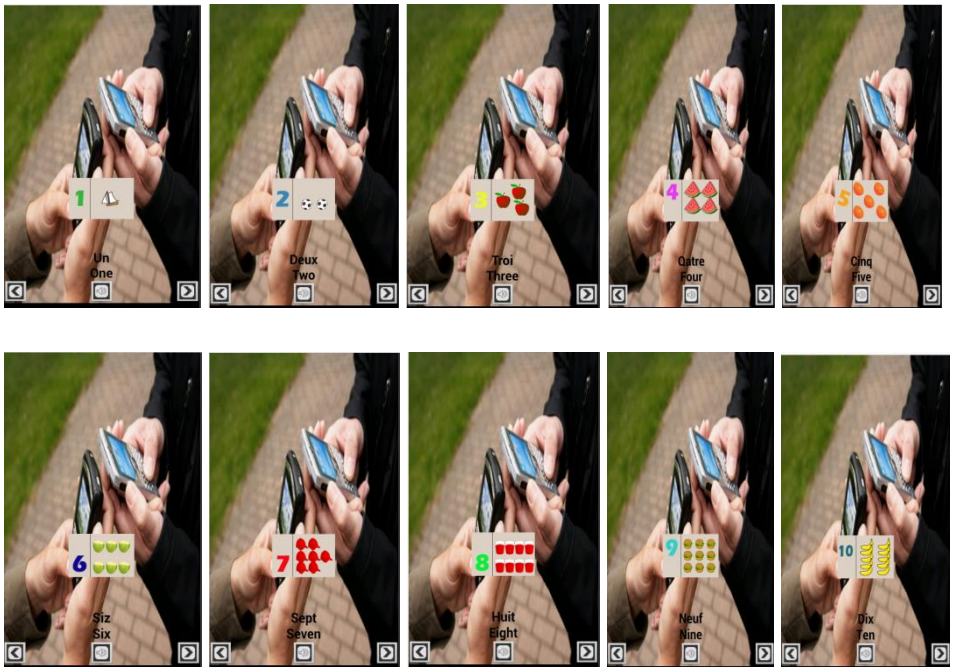


Figure 13: Screenshots of lesson activity in the Number module

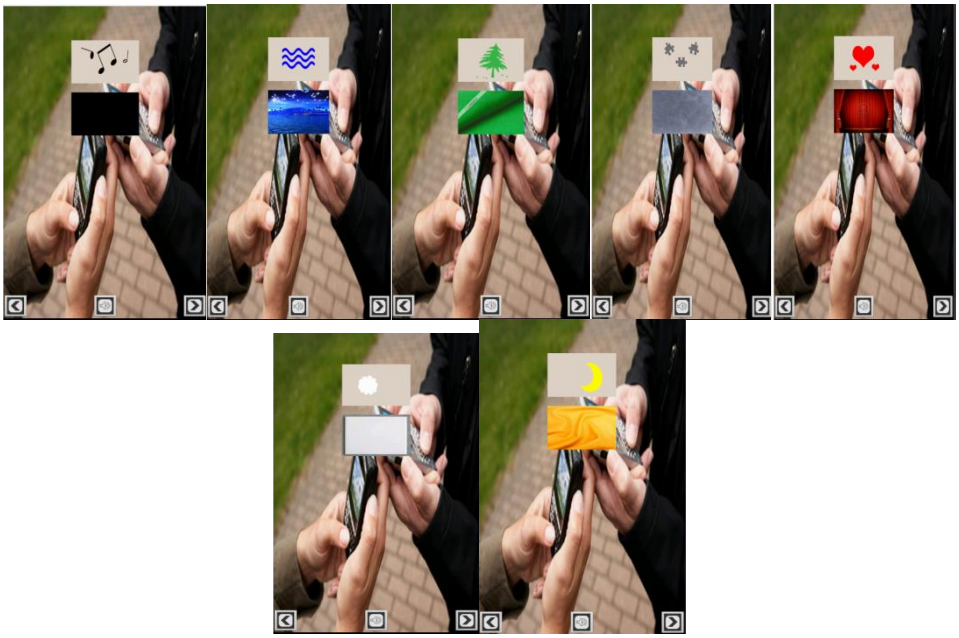


Figure 14: Screenshots of lesson activity in the Colour Module

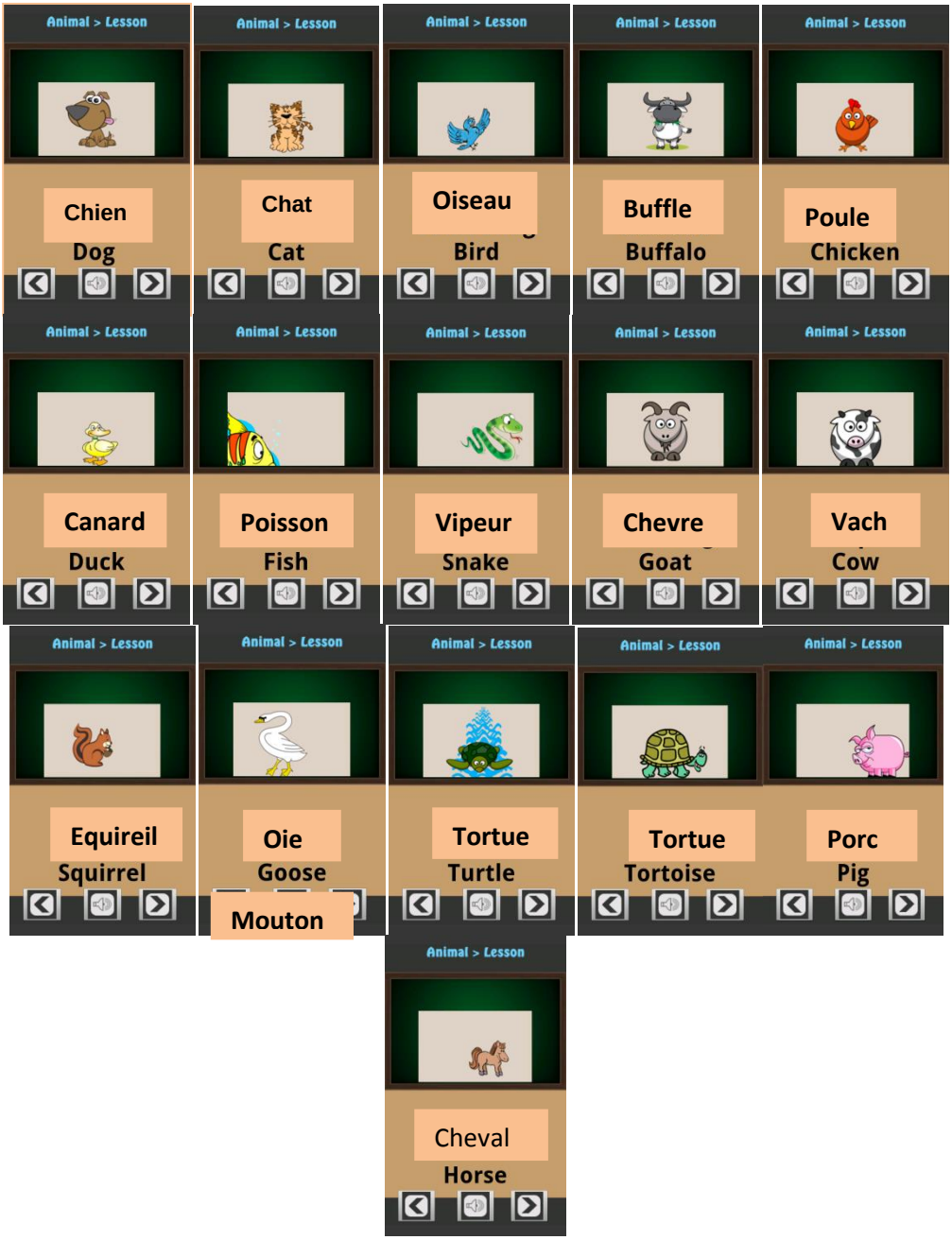


Figure 15: Screenshots of lesson activity in Animal module

Figure 16: Screenshots of lesson activity in the Basic Phrases Module

Exercise Activity

The exercise activity included in each module is different from each of the other module, in terms of type and design. The Number module exercise is to tap the gong picture according to the numbers shown in French word. The Color module exercise is a multiple choice question to guess the color's name in French. The Animal module exercise is to type the animal's name in French, with hints given at the screen. The Basic Phrase module exercise is where user has to choose between two pictures that best depicts the phrases given in words. The following are the screenshots from each of the module.

Figure 17: Screenshots of exercise activity of Number module

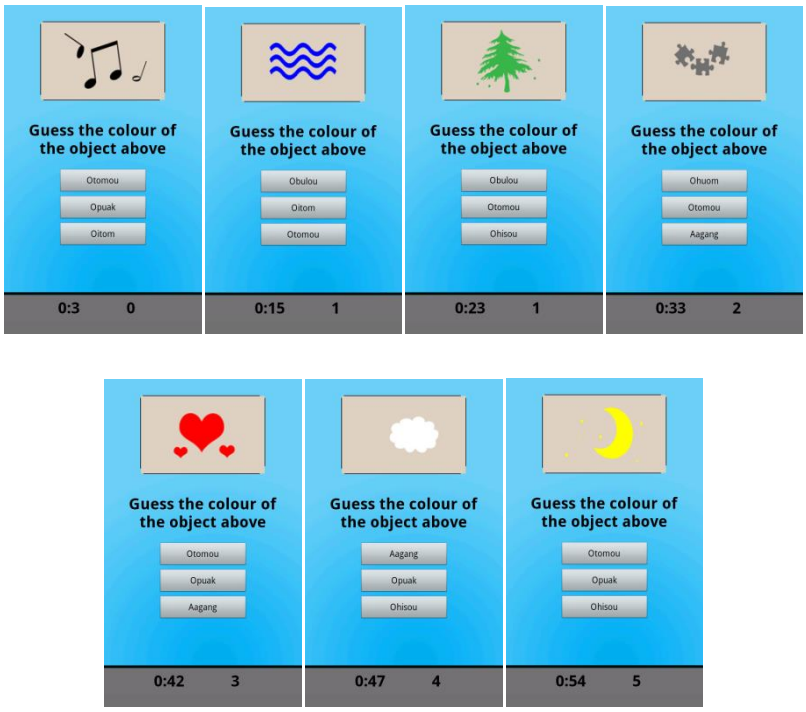


Figure 18: Screenshots of exercise activity of Color module

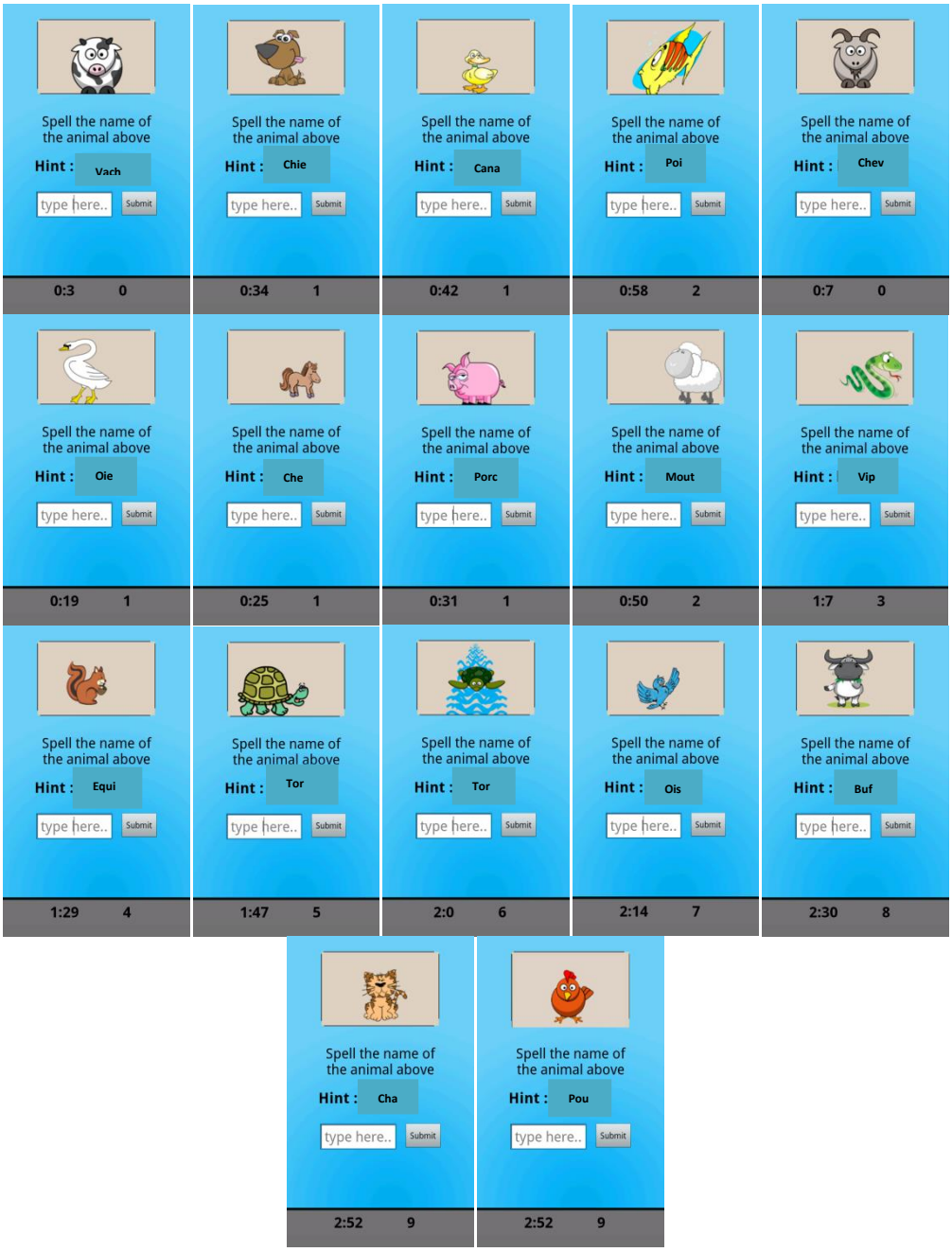


Figure 19 : Screenshots of exercise activity in Animal module

Figure 20: Screenshots of exercise activity in Basic Phrases module

Figure 21 : Screenshots of Score screen in each module.

4.4 Survey Data Collection & Findings

During the development phase of the project, after two of the modules have been developed, an early usability test and user perception test was conducted on 10 participants. The target participants of the test were not the target users of this application, which are tourist and businesses, but they are people who know already French language which they can help user using the application.

4.4.1 Usability Test

The usability aspects of this application were measured using System Usability Scale. This test requires the users/participants to fill up a questionnaire after using the system. The users are required to answer each question/item by choosing from a 5 point scale ranging from “Strongly agree” to “Strongly disagree”. The results and analysis from the test are shown below.

Question 1: I think I would like to use this system

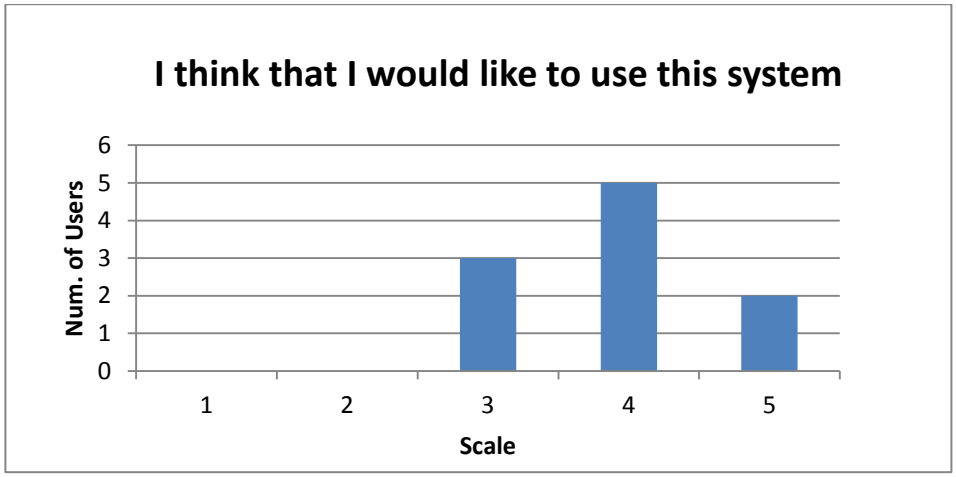


Figure 22: Results from SUS survey Question 1

The figure above shows the result for the first question. The question asked whether user would like to use the system (application). The result shows that two users rated scale 3, five user rated scale 4, and three user rated scale 5. This shows that 80% of the users agree that they would like to use the application.

Question 2: I found the system unnecessarily complex

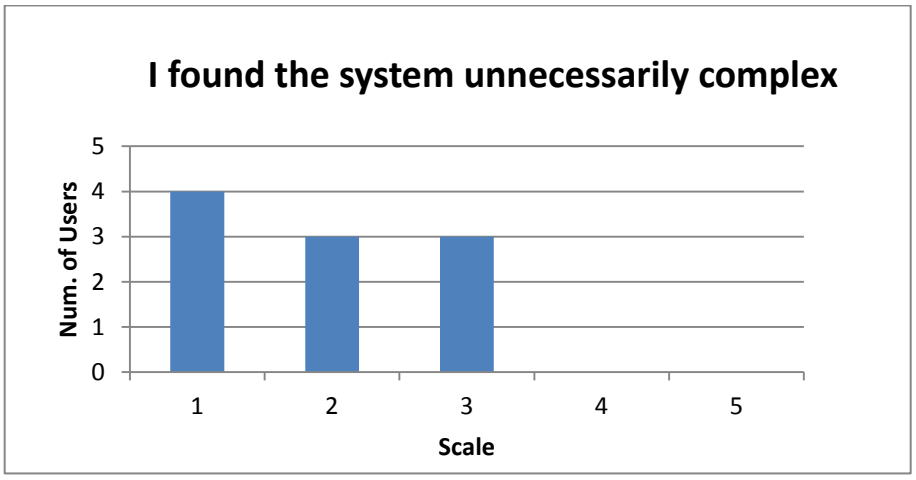


Figure 23: Results from SUS survey Question 2

The second question asked the user if they find the system to be unnecessarily complex. The result shows that four users chose scale 1, three users chose scale 2 and three users chose scale 3. None of the users chose scale 4 or scale 5. This shows that most of the users do not think that the application is unnecessarily complex; while there can still be room for improvement on system (application) complexity.

Question 3: I thought the system was easy to use

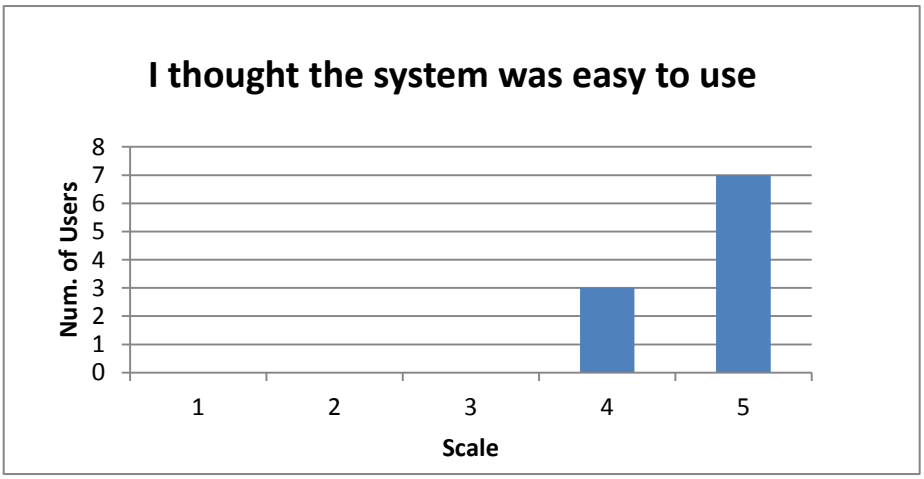


Figure 24: Results from SUS survey Question 3

The third question in the SUS testing asked the user if they thought that the system (application) was easy to use. Seven of the users rated 5 on the scale, and the remaining three users rated scale 4. This shows that the users think that the application was very easy to use.

Question 4: I think that I would need the support of a technical person to be able to use this system.

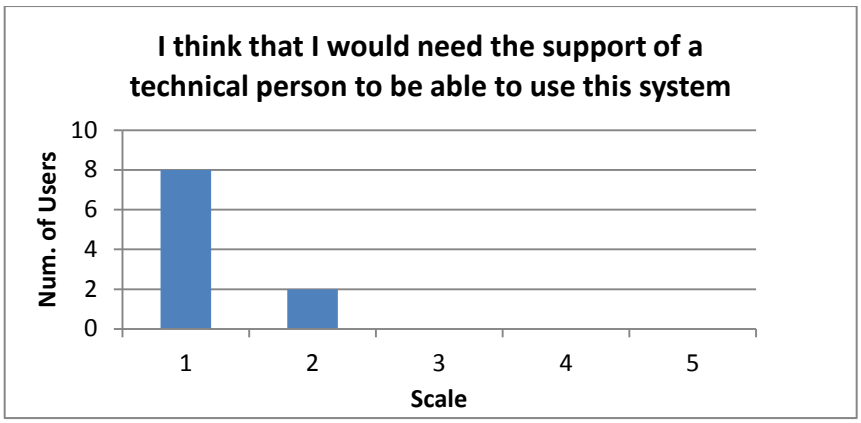


Figure 25: Results from SUS survey Question 4

The fourth question asked if the users think that they would require support and assistance from a technical person. The result shows that eight of the users chose scale 1, while the remaining two users chose scale 2. This shows that the users did not quite need any assistance from any technical person to use the application.

Question 5: I found the various functions in this system well-integrated

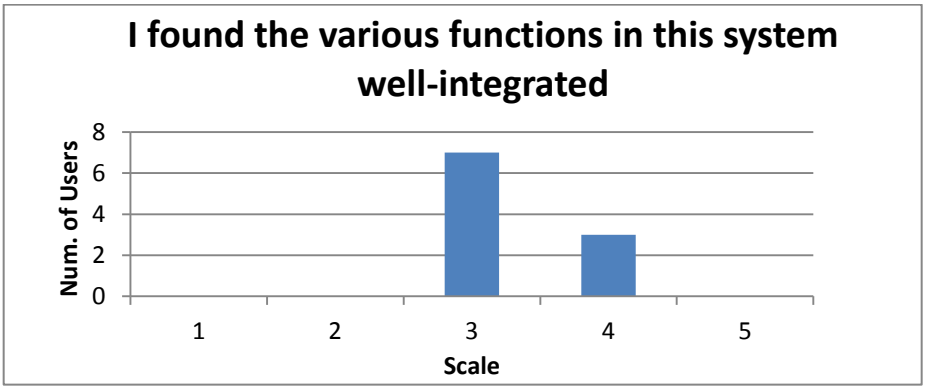


Figure 26: Results from SUS survey Question 5

The fifth question asked if the users find that the various functionalities in the system (application) are well-integrated. The result shows the seven of the users chose scale 3 as their answer, while the remaining three users chose scale 4. This show the functionalities inside the application can be integrated better.

Question 6: I thought there was too much inconsistency in this system

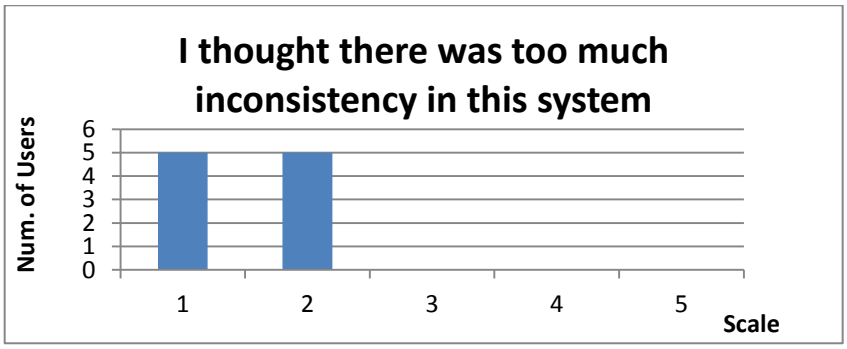


Figure 27: Results from SUS survey Question 6

The sixth question in the SUS testing asked if the user thought that there was too much inconsistency in the system (application). 50% of the users, which comprises five people, chose scale 1 while the remaining 50% chose scale 2. This shows that not half of the users think that the consistency in the application is good, while the rest thinks there is some inconsistency.

Question 7: I would imagine that most people would learn to use the system very quickly.

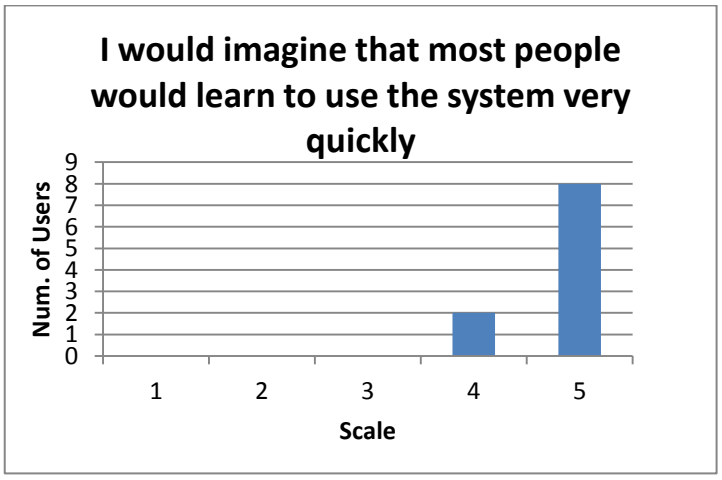


Figure 28: Results from SUS survey Question 7

The seventh question asked the users if they would imagine if other users would learn to use the system (application) very quickly. The result shows that eight users chose scale 5, and the remaining two users chose scale 4. This indicates that almost all of the users think that other people will learn to use the application quickly.

Question 8: I found the system very cumbersome to use

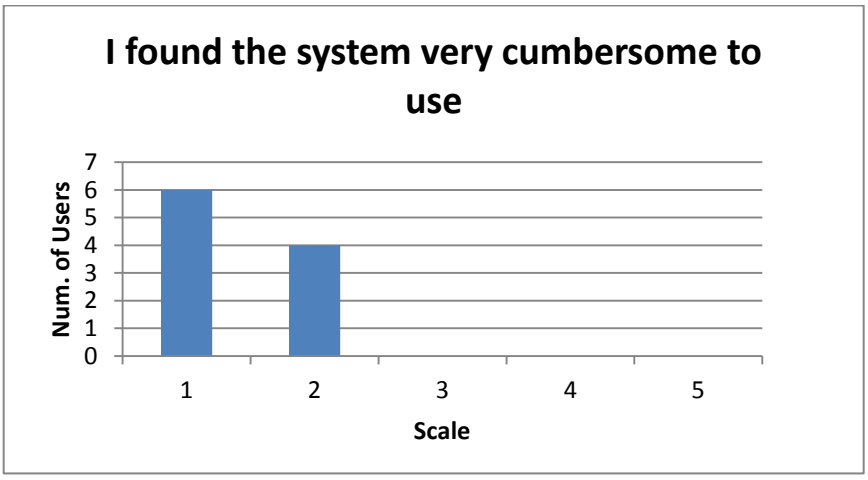


Figure 29: Results from SUS survey Question 8

The eighth question asked if the users find the application to be very cumbersome to use. The result shows that six of the user rated scale 1 and another four user's rated scale 2 as their answer. This shows that over half of the users think that the users think that the application is not at all cumbersome to use.

Question 9: I felt confident using the system

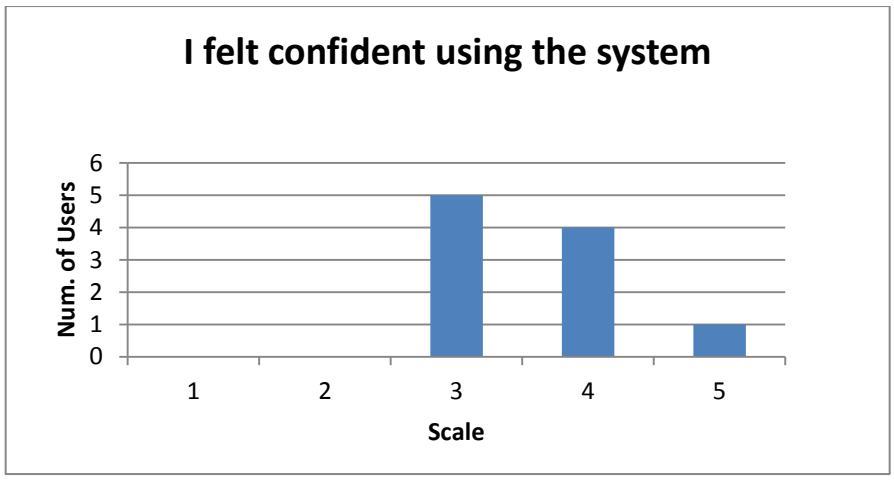


Figure 30: Results from SUS survey Question 9

The ninth question asked the user if they were confident when they were using the system (application). The result shows that five users scored scale 3 as their answer, four users scored scale 4, and one user chose scale 5. This shows that not all the users felt confident in navigating through the system.

Question 10: I needed to learn a lot of things before I could get going with this system

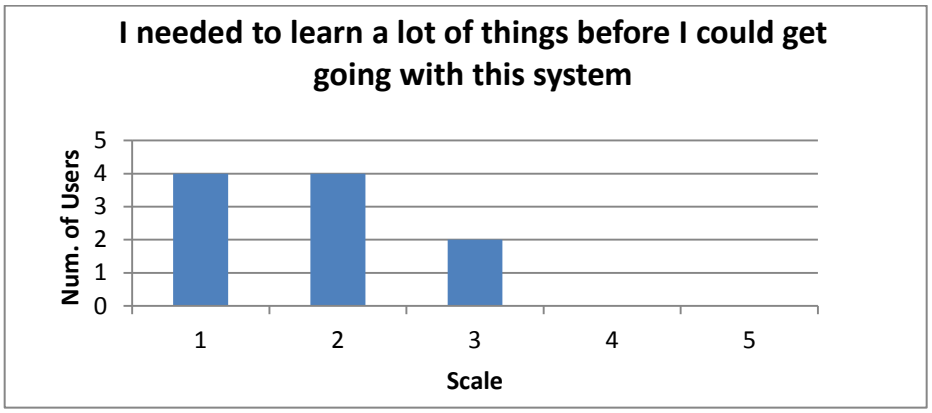


Figure 31: Results from SUS survey Question 10

The last question asked if the user think that they need to learn a lot of things before they could go on with the system (application). The results show that four of the users selected scale 1, another four selected scale 2, and the remaining two users selected scale

3. This indicates that some of the users still think that they have to learn a lot of things before they could get going with the system (application).

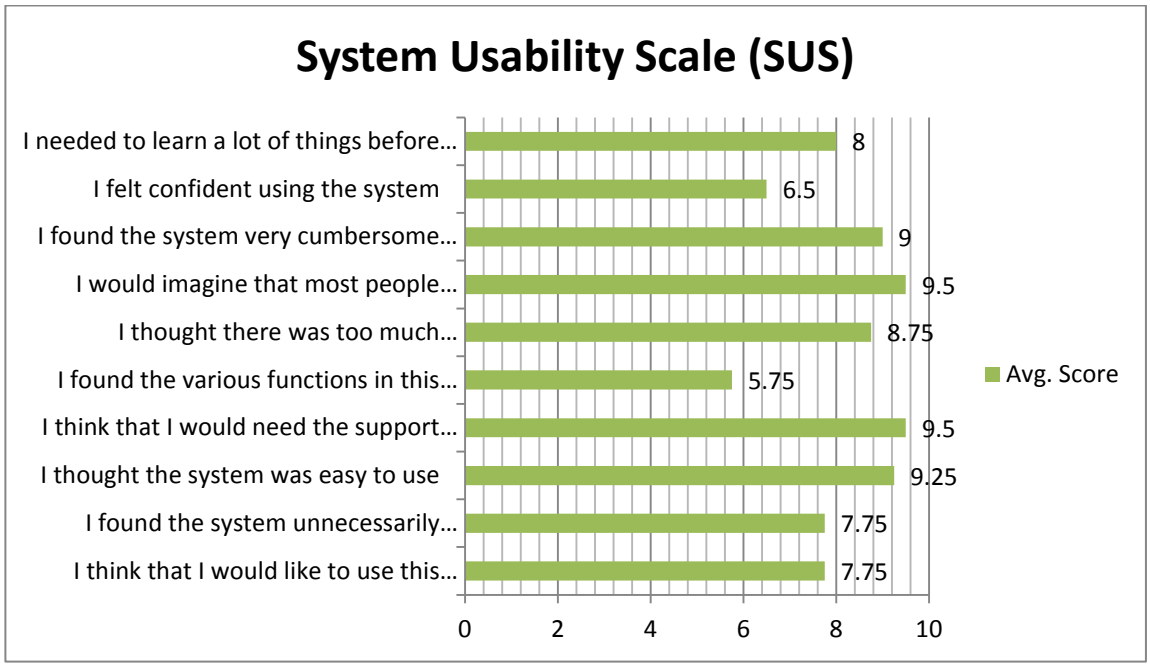


Figure 32: Average Score from Each Item on SUS survey

The figure above shows the average score for each of the question, from a total of ten users. The calculation to obtain average scores for odd-numbered (1, 3, 5, 7, and 9) questions differ from the average scores for the even-numbered (2, 4, 6, 8, and 10) questions. This is because question 1, 3, 5, 7 and 9 expect users to rate more towards the higher side of the scale (3 – 5) to achieve better usability rating, while question 2, 4, 6, 8 and 10 expect the opposites.

The formulas to obtain the average scores for the questions as follows:

<u>Odd-numbered questions</u>

Average score = (Scale position – 1) * 2.5 / number of users

<u>Even-numbered questions</u>

Average score = (5 – scale position) * 2.5 / number of users

The System Usability Scale (SUS) score of Learning French from the ten users is the sum of the average score of all the questions.

SUS = 7.75 + 7.75 + 9.25 + 9.50 + 5.75 + 8.75 + 9.50 + 9.00 + 6.50 + 8.00
= 81.75

An SUS score of above 80 is considered as attaining ‘grade A’ in the usability aspect. The average score of the application showed that development process have been carefully done with regards to the usability aspect. Another reason for this high usability quality of the application is to accommodate the target users of this application. It is crucial that an application is easy to use and provide no burden for the users who are using it

4.4.2 User Perception

User perception is a very important aspect in the acceptance of the application. A prototype testing feedback survey was conducted simultaneously with the usability test to determine user perception. This section will show the results from the survey.

Question 1 : Are you are a French?

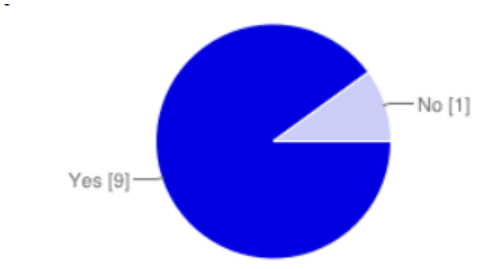


Figure 33: Results from Question 1 Prototype Testing Survey

The figure above shows that out of ten people that took the survey, nine people are French, while only one is a non-French. This helps to determine who the participants of this test are.

Question 2: How would you rate your fluency in French?

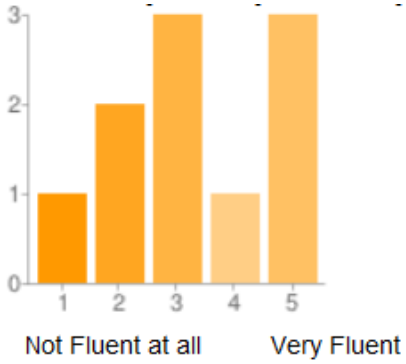


Figure 34: Results from Question 2 Prototype Testing Survey

The second question asked the participants to rate their fluency on the French language on a scale of 1 to 5, where scale 1 indicates “Not fluent at all” and scale 5 depicts “Very fluent”. The result shows that one participant is not fluent at all in the language, two participants rated scale 2, three participants rated scale 3, one user rated scale 4, and the remaining three participants rated that they are very fluent in the language. This question helps to see the level of knowledge in the language among the participants.

Question 3: Is the application easy to use?

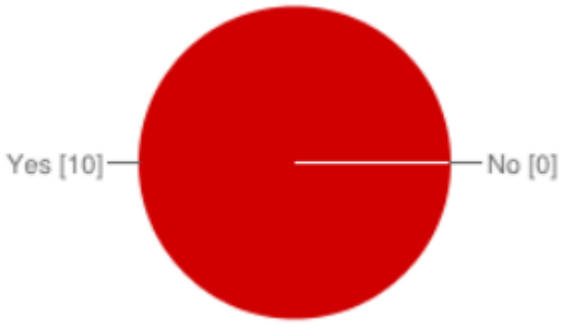


Figure 35: Results from Question 3 Prototype Testing Survey

The figure above shows the result for the third question that asked if the application is easy to use. 100% of the users think that the application is easy to use.

Question 4: Did you require a ‘Help’ or ‘Tutorial’ page to use the application?

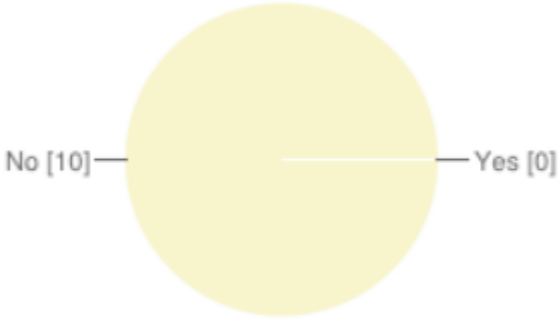


Figure 36: Results from Question 4 Prototype Testing Survey

The figure above shows the result for the fourth question which asked the participants if they required any ‘Help’ or ‘Tutorial’ page to use the application. 100% of the participants chose ‘No’ as their answer, which shows that the application is pretty much straight-forward and user easily learn how to use the application with intuition.

Question 5: In your opinion, is the application suitable for tourist and business people to learn French?

Figure 37: Results from Question 5 Prototype Testing Survey

The figure above shows the result for the fifth question on suitability of the application to children aged seven to twelve years old to learn French language. Eight out of ten participants said ‘Yes’ and the other two participants said ‘No’.

Question 6: Is the interface of the system suitable to keep users interested in using the application?

Figure 38: Results from Question 6 Prototype Testing Survey

The figure above shows the result for the sixth question which asked the participants if the interface of the system suitable to keep users interested in using the application. Nine out of ten participants indicated ‘Yes’ as their answer while one participant said ‘No’.

Question 7: Did you learn something new from the application?

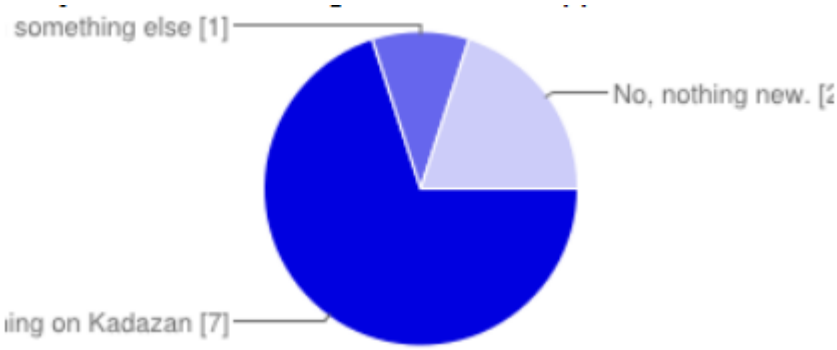


Figure 39: Results from Question 7 Prototype Testing Survey

The figure above shows the result for the seventh question that asked if the participants learnt something new from the application. 70% of the participants learnt something new on French, 20% learnt nothing new, and one participant learnt something new on something else.

Question 8: What would you suggest to improve/add into the application?

In this question, the field in the question is optional, which means user can choose not to answer. Out of the ten participants, seven out of the ten participants gave their feedback.

Participant 1's feedback:
" The pictures and sounds are suitable for users to learn French vocabulary. Add more modules".

Participant 2's feedback:
" The app is good already. In future development, you should add courses to organize the modules into more levels and chapters. Overall, it is a nice and fun app"

Participant 3's feedback:
" It is colorful and entertaining enough to keep users keep on pressing. Too bad, only a

few categories are available now. Hopefully, this will be implemented soon and can have full access."

Participant 4's feedback:
" If possible, use real pictures to show the objects. Give more examples rather than 1 per item. Overall, good job for tourist to learn French. Effort well done! Thumbs up"

Participant 5's feedback:
" I love the sounds and animation included"

Participant 6's feedback:
" Eva keeps pronouncing animal name in French along with the app! Good job!"

Participant 7's feedback:
"Hope more vocabulary be inserted soon"

4.5 Challenges Faced During Development of Application

a. Previous FrenchLearning Application

There is no much mobile application on French language learning. As pointed out in Chapter 2, the previous learning tool for French language consisted only story books, dictionary, flash cards, and phrase books. This makes it hard to have a point of reference in developing this application.

b. User Testing

The user testing aspects were also one of the challenges faced in the development process. The target users for this application are tourist and Business . As I am now doing the development and project in Universiti Teknologi PETRONAS, in Perak, I have to rely solely on the Internet to distribute the application installer and the usability

test as well as the user perception survey. The challenges is to know be able to see and analyzed the users actually testing out the application.

c. Device Compatibility

The application is tested on Samsung Galaxy Y and Samsung Galaxy W during the development phase. When the application installer is distributed, it is a challenge to find participants with exact devices I have used during the development or having similar screen resolution. This also relates to the previous challenge I face, that I only can rely on the Internet to distribute the installer, without being able to see the actual device installing the applicat.

CHAPTER 5

CONCLUSION

5.1 Recommendations

More readings and extensive search of materials need to be found in order to have the correct inputs on the usage of the language. The materials available on the Internet especially articles on French language wasn't much enough.

This project only covers the scope of Android smart phones users. In the future, it is possible to create similar application for other smart phones platform, such as Apple's Iphone, RIM's Blackberry and other Symbian smart phones. It is also possible to create a stand-alone system for PCs to educate on the language more.

5.2 Conclusion

Learning French for tourist and businesses is a project that is designed to produce an Android application as a final product to assist people in speaking and learn basic vocabularies vocabulary. The target users of this application are tourist and businesses

people it will be an alternative to books as learning tools for French language. User will be able to learn new vocabulary and learn on spellings on French words. The prototype testing has been proven to be successful with user acceptance based on the usability test and user perception. Furthermore, if this application prototype can be improved and finalized, this might possibly be the first French learning application available for smart phones. With all these criteria considered, I hope that this project will be able to help the people in learning the language with this application.

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