SELF-LEARNING ENGLISH AS A SECOND LANGUAGE VIA MOBILE DEVICES

A THESIS SUBMITTED TO THE GRADUATE SCHOOL OF APPLIED SCIENCES OF NEAR EAST UNIVERSITY

by

MANAL ALI ATIYAH ATIYAH

In Partial Fulfillment of the Requirements for the Degree of Master in Computer Information Systems

NICOSIA, 2016

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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To my Husband, Son and Mother in Law ...

ABSTRACT

Mobile devices such as mobile phones and tablets are being used by many children around the world and this number is increasing constantly. Usually children use the mobile devices for communication with their friends or with their parents, or for playing games. Mobile devices can also be used for educational purposes and many researchers have studied and published their findings on using these devices in teaching and self learning. This thesis is about game based learning of the English language as a second language using an Android based mobile phone. The age group of the children in this study are 12-15 and the children use their mobile phones in a self learning manner. The developed mobile application helps children learn and also improve their pronunciation and writing skills while playing on the mobile phone. Children are presented with different colours and with different objects where they are required to know them in a fun way. Although the system was developed on a mobile phone it can also be used on tablet computers or PCs with little modifications. It is hoped that the developed system will be useful to young children who are learning the English language pronunciation and vocabulary.

Keywords: Mobile application; game based learning; mobile learning; self-learning; mobile teaching; learning English

ÖZET

Mobil telefon ve tabletler gibi mobil cihazların çocuklar tarafından kullanımı dünyada her geçen gün artmaktadır. Genellikle çocuklar mobil cihazları arkadaşları veya ebeveyinleri ile iletişim kurmak ve oyun oynamak için kullanmaktadırlar. Mobil cihazlar eğitim için de kullanılabilirler ve bu maksatla birçok araştırmacı bu cihazların öğretim ve kendi kendine öğrenim konularında çalışmış ve/veya yayın üretmiştirler. Bu tezin amacı, Android tabanlı cep telefonu kullanarak ve oyun tabanlı eğitim prensipleri ile İngilizce dilini öğretmektir. Bu çalışmada 12-15 yaşındaki çocuklar alınmış ve kendi kendilerine öğrenimleri için kendi cep telefonlarını kullanmışlardır. Geliştirilmiş olan mobil uygulama, çocuk oynarken onların konuşma ve yazı becerilerinin artmasına yardımcı olmuştur. Çocuklara değişik renkler ve değişik objeler sunulmuş ve bunları zevkli bir şekilde öğrenmelerine yardımcı olunmuştur. Sistem bir mobil cep telefonunda geliştirilmiş olmasına rağmen çok küçük değişikliklerden sonra tablet bilgisayarlarda veya PC lerde de kullanılabilir. Geliştirilmiş olan sistemin çocukların İngilizce konuşma ve kelime haznelerini artırmalarında yardımcı olacağı ümit edilmektedir.

Anahtar Kelimeler: Mobil uygulama; İngilizce öğrenimi; oyun tabanlı öğrenme; mobil öğrenme; kendi kendine öğrenme; mobil öğretme

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LIST OF ABBREVIATIONS

- **GSM:** Global System for Mobile Communication
- LAN: Local Area Network OS: **Operating System** PD: **Personal Device** PHY: Physical **PSDU:** Physical Layer Service Data Unit SAP: Service Access Point TTA: **Telecommunications Technology Association** Wireless Broadband WiBro: WPAN: Wireless Personal Area Network Wireless Wide Area Network WWAN: CDMA: **Code Division Multiple Access** ESTI: European Telecommunication Standards Institute GPRS: General Packet Radio Service Network Interface Card NIC: Personal Area Network PAN: PDA: Personal Digital Assisstant **UMTS:** Universal Mobile Telecommunications System WAN: Wide Area Network Wireless Local Area Network WLAN: **CDPD**: Cellular Digital Packet Data GSM: Global System for Mobile Communication HME: Hub Management Entity LAN: Local Area Network Human Interaction Devices HID: SMS: Short Message Service AOS: Android operating system PC: Personal computer

CHAPTER 1 INTRODUCTION

1.1 Overview

Cell phone is the general term for the handheld personal computers (PCs). These devices are intended to be versatile to a great degree, and they can usually fit in your pocket. Some cell phones such as tablets and iPads are sufficiently effective to carry out a significant number of activities that can similarly be carried out on a desktop computer or a portable workstation. This significant development in technology encouraged the spread of mobile devices so that they became available everywhere (Krosk, 2008). Due to this improvement, mobile devices started to be used as equipment of learning outside the classroom without the need of directions from teachers (Cavus & Ibrahim, 2009; Miangah & Nezarat, 2012).

In terms of using mobile resource in the learning process, Google Android is considered as the main choice as a product of Google. This is considered as the primary market for mobile applications and it turned out to be practically parallel with the applications produced by Apple, which is another mobile technologies company (Schmidt et al., 2009). Additionally, Android working framework is considered as the heap of a large portion of the versatile frameworks, due to their working framework, and the key applications. Android is a product stack for cell phones that incorporates a working framework, middleware and key applications. Moreover, the applications are utilized by Java Programming Language. Thus, Android working framework is thought to be the most secure working framework, even better than the Apple working framework when compared (Nimodia et al., 2012). Nowadays, cell phones are considered as a practical growth framework (Gilski et al., 2015), while the Android working framework turned out to be so acclaimed with a large number of clients every year.

M-learning is a sort of discovery using cell phones as advanced personal digital assistants (PDA), individual computerized partners and portable personal computers (PCs). The change of the m-learning frameworks, specifically their ability to provide the asked information to learners with less limitation as gadgets, areas and systems are used. Frameworks utilize WiFi, which organizes numerous administrations to enhance the training procedure so that M-learning framework becomes a complete framework providing short message services (SMS), declarations, homework and test administrations as well as giving comments and feedback to learners. The process of

establishing a remote system covers colossal regions and allows clients to have an access to administration within a wide range. The most essential people benefiting from this are educators, students, instructive associations such as colleges, schools, educational establishments or individuals searching for an appropriate m-learning that precisely suits their demands (Cavus et al., 2011).

These days, learning and teaching English language is among the most important topics, particularly for the early age learners (Ahmad et al., 2012). It is believed that children at this age should be selected to be prepared for the future (Al-Shawi, 2014) because being ready and able to speak the English language as an international language has so many advantages for future studies. Nowadays, Android system offers so many types of teaching and learning the English language for all ages, so the user of the Android operating system has the ability to learn at any time and any place. This proposed system is different than other applications in the Android operating system, since this system aims at the children at an early age to teach them the important words in writing, while other applications depend on assessment such as tests, quizzes and puzzles. The proposed system is based on a game system using Android operating system on tablets and smart mobile phones. Some researchers intended to develop video games in order to teach children the idioms in English. In this way, the children can preserve their motivation in learning while enjoying the game (Al-Ramahi et al., 2015).

While some researchers aimed to verify of the quality of these lessons with and without the electronic textbooks, others compared between the usage of the electronic type and the standard textbooks (Laketa et al., 2015).

The proposed game offers the player an opportunity to be a hero in the game world and it demonstrates the players how much they improved over the course of the game via the hero. In this research, the proposed model offers a complete fun and motivation; thus, it is more effective than the other proposed models by other authors.

Furthermore, some researchers also gave the attention to English learning and teaching as a foreign language as an important topic in terms of concentrating on the attitude, motivation and assessment. The conducted survey depends upon the research about the motivation in learning English from the textbooks. This research was conducted in Iran in three different language centers (Lankaran et al., 2015).

It is well known and agreed that English language is a universal and international communication language in the Middle Eastern world as a foreign language (Cavus et al., 2011). This international language is useful this part of the world (Huang et el., 2012) in the daily life in order to carry out

international business (Bruthiaux, 2002). Moreover, this universal language is also important for all nations so as to continue their business successfully (Nimodia et al., 2012).

According to Chen et al. (2008), the use of mobiles to support the English language learning is considered as the main element in controlled and non-controlled learning foreign language inside and outside the classroom. According to Cavus & Ibrahim (2009), the mobile device can be considered as the key path in order to learn to the maximum outside the classrooms without the need for teachers.

1.2 The Problem of the Study

Good readers are phonemically aware, they understand the alphabetic principle, apply these skills in a rapid and fluent manner, possess a strong vocabulary, have syntactical and grammatical language skills, and have the ability to relate what they read to their own experiences. Difficulties in any of these areas may impede the development of reading skills (Wang et al., 2013). Furthermore, learning to read begins far before children start school formally. Children who have stimulating literacy experiences from birth onwards will experience troubles in vocabulary development, understanding the goals of reading, and developing an awareness of print and literacy concepts (Sandberg et al., 2011).

However, children rose in poverty in the Middle East part of the world with a limited proficiency in English whose parents have a low literacy level are at increased risk of possessing lower reading abilities.

1.3 The Originality of the Study

Nowadays, the idea behind improving any application on Android operating system is to have original products. In this thesis, the originalities of the improved game will be discussed. These originalities can be listed as follows:

- The improved game has improved listening parts in order to improve the listening capability of children,
- The system has the ability to communicate with the child by voice to teach him a variety of vocabulary,
- The system provides sounds with different music if the answer is right or wrong,
- The improved game gives children the ability to write by hand to be sure that the spelling of the word was correctly memorized,

- The improved game has three different levels of learning in terms of colors, transportation and animals,
- The improved game tests children's pronunciation of the appearing word, and
- The improved game gives the child the opportunity to match the appearing pictures with their compatible targets.

1.4 The Aim of the Study

The study aims to render English language learning process funny as much as possible and easier for children at the age of 10. The purpose of this research is to write a software using Java Script with combination of Eclipse program being compatible with the Android operating system mobile devices such as tablets and Samsung galaxy smart phones in order to teach English language to learners as easily as possible by using different sorts of fun in the classroom.

1.5 Limitations of the Study

The aims bears the accompanying restrictions below:

- 1- The developed mobile system can only run on the Android operating system based mobile devices such as smartphones.
- 2- This work is confined by the period that leads off from June 2015 till January 2016 depending on the models observed in this field.
- 3- The required software improvement and selecting the pictures suitable for the range of ages can be difficult.
- 4- Optimizing the target as a motivated game for the children, setting the target of the game to teach them the required information and making the proposed game as funny as possible would create problems.

1.6 Overview of the Thesis

This thesis consists of six chapters:

Chapter One shows a brief description of the new objective in teaching children English language as a game based activity in order for them to learn English and be ready for future study.

Chapter Two presents an overview of different research conducted on learning English as a foreign language by using tablets and smart phones.

Chapter Three consists of two sections; the first section presents an overview of different methods of teaching and preparing children for future study. It introduces the research conducted in the field fully. The second section offers more details about teaching English language on the basis of games and the use of the tablets and smart phones for their dynamic in teaching and learning the required objectives.

Chapter Four discusses the software, the proposed model specifications and its scenario, identifies the proposed software scheme simulation results.

Chapter Five draws conclusions on the results achieved in the previous chapter. Moreover, it presents ideas that might be beneficial for readers to undertake further research in the area of the study.

CHAPTER 2 RELATED RESEARCH

2.1 Mobile-Based English Learning in Foreign Children

Pemba et al. (2016) concerned teaching English to five-to-six year old youngsters living in China by the customary classroom techniques utilizing non-local speakers of English as educators and by a PC application set up by Kadho, Inc. In order to prepare youngsters in the view of English consonants vowels and postfixes created by local speakers of English. The information comprises of judgments of kids' articulation in emulating English sentences, at the onset and in the 1st, 3rd, 6th and 10th months of the treatment. Youngsters who got the PC application were judged to have fundamentally better accents from the principal month of preparing onwards.

Alhassan et al. (2016) investigated the states of mind, level of status, and conceivable hindrances to actualizing Mobile Learning as a piece of omnipresent learning. Furthermore, the study endeavored to discover to what degree understudies were keen on versatile learning. Likewise, it planned to answer the question with respect to the preparation of understudies so as to utilize versatile learning advances. Besides, the involvement level of understudies in electronic learning was analyzed. The study was directed to assemble profitable information about the conceivable points of interest and detriments of portable learning, and the obstructions in understudies were expected to be confronted while actualizing the versatile learning advancements. In order to answer the examination addresses, a survey was managed to 1000 understudies, with some of them being met for top to bottom data. The findings of the study demonstrated that understudies had very inspirational states of mind towards portable learning, and they had the fundamental specialized information to execute versatile learning. In any case, understudies were found to have nearly no involvement in electronic and portable learning. Understudies have said a few focal points of versatile learning among which was the likelihood of learning outside the classroom.

A few disservices were specified, such as the way that understudies might have been irritated by getting an excessive number of instant messages every day. At long last, understudies recorded a few boundaries expected to confront the usage of portable learning. The study was concluded with

proposals for future research and suggestions to college authorities to better actualize versatile learning.

Alemi (2016) explored that innovation has constantly assumed a key part in General English and English for Specific Purposes (ESP) dialect learning and instructing. As of now, the scope of advancements being utilized as a part of classroom everywhere throughout the globe in Language Learning and Teaching (LLT) has turned out to be extremely various, and some of which has turned out to be the key to the dialect practice have quickly been depicted in this paper. Since English is the most regularly learned second dialect around the globe, this study expects to investigate how cutting edge and present day innovations are utilized to bolster the procedure of English dialect instructing and learning for those at different phases of training. Moreover, it shows and thinks about a portion of the inventive and novel methodologies that are being investigated and connected to a specific end goal in order to enhance the strategies for English dialect improvement and to fulfill the present needs of the youthful era in a much focused world.

Matzat (2004) explained that data and correspondence advancements information as well as Communications Technologies (ICTs) have encouraged all parts of life; work, relaxation, and instruction (Pelgrum & Law, 2003). The Indonesian government has made an arrangement to coordinate ICTs inside the classroom settings as expressed in various proclamations and controls. In any case, any event in the distributed writing does not generally show much appraisal with respect to whether the usage is a successful or much evaluation of government and instructor's endeavors to make the execution powerful practically speaking. With the aim of addressing these inquiries, this survey paper shows the setting of data and correspondence innovations (ICTs) used in Indonesia, including a portrayal of the projects and a synopsis of different studies directed by Indonesian educators in incorporating ICTs in English as remote dialect learning. The projects were set up by the Indonesian government so as to advance the utilization of ICTs with a specific end goal to make them a piece of ordinary educating and learning.

2.2 Game-Based English Learning for Foreign Children

Wang et al. (2011) expressed that tests are partitioned into two structures, which are quantitative and subjective techniques, as much as showing the understudies and their proof of critical changes

in their learning inspiration and vocabulary obtaining, and that their attention levels were reduced when learning by amusement due to the companion distraction. Different discoveries uncover that there is a critical contrast in the use of recreations and English execution of the understudies, most eminently with respect to capability levels. The different ramifications for instructive utilization of gaming segments as to improve youthful learner's English execution and states of mind have additionally been introduced.

Parvin et al. (2015) highlighted that administrations of various nations have perceived the significance and estimation of computerized advancements in dialect learning over the globe. This article depends on the pilot venture of saving the children utilizing information and corresponding technology (ICT) in instruction. Through this activity, intelligent media programming in view of national educational modules of English class 4 were produced and assessed in choosing government grade schools. The pre-mediation study demonstrated that the educators do not possess the dialect skill to unhesitatingly encourage English classes utilizing the Communicative Language Teaching (CLT) approach. The consequences of the venture demonstrated that the utilization of varying media content has a solid potential for upgrading and advancing intelligent dialect classes. In any case, the accomplishment of the program relied on upon how the innovation was outlined and actualized and how the educators were prepared to utilize it.

Kiryk (2010) concentrated on the instructive advantages in addition to the proposals of consolidating diversions into a learning domain. Additionally, it included amusements that can be utilized as a part of an outside dialect classroom in order to improve understudy learning. The amusements were created by different sources and utilized as a part of a Spanish classroom in an American secondary school with youngsters aged between fourteen and eighteen.

Yolageldili et al. (2011) investigated the viability of utilizing diversions as a part of instructing punctuation to youthful learners from the perspectives of Turkish EFL educators working in grade schools. The views of these English dialect educators (n=15) were gathered through a poll and the aftereffects of this study showed that Turkish EFL instructors had a scope of originations about utilizing recreations as a part of language structure instructing, similar to those reported in the present writing. This study recommends that while Turkish EFL educators acknowledged the

viability of utilizing amusements as a part of language structure instructing, they did not utilize diversions as much of the time of the course in their classrooms.

Khatibi et al. (2013) researched the dialect learning using intelligent amusements. An exploration combination was thought to be the best strategy as an accessible examination was expected to be carried out on dialect learning. Although different studies have explored the work of intuitive recreations in dialect taking in, this field of research is still in its early stages. Neural associates of dialect learning were compared with that of intelligent gaming and the results showed that there were both similitudes and contrasts in the mind structures enacted by gaming and those that were initiated by dialect learning. Additionally, the recognized systems which could be utilized to use intelligent diversions in dialect the young of today and has offered an increase to an expanding requirement for joining innovation, such as intuitive amusements in instruction. Therefore, it is fundamental for educators to get training in executing intelligent recreations in the dialect classroom.

2.3 Related Work

Anthony (2001) overviewed that the English Language Learners (ELL) models delineated those utilized for the Rating Scales gave in the BC Performance Standards for Reading and Writing. In addition, a depiction of norms for Oral Expression has been created, since the oral dialect capability is a paramount part of second dialect procurement and may be a test for the ELL understudies. For oral representation, the gauges relating to both open abilities (i.e., tuning in) and expressive aptitudes (i.e., talking) are incorporated on a solitary framework. Despite the fact that the ELL norms concentrate on just three dialect areas perusing, composition, and oral statement it is comprehended that the successful dialect guideline for all understudies, including ELL understudies, will likewise emphasize open doors for the improvement of survey and speaking to aptitudes. Every lattice gives a distinct scale of dialect capability to English Language Learners for one of the dialect areas. A set of grids has been given to each of three age/evaluation bunches - Primary, Intermediate, and Secondary. Since it is accepted that understudies' levels of capability in English will be consistently reassessed, and particularly when it was started with one age/evaluation group then moved onto the next, no endeavor has been made to lucid the grids over the age/ evaluation bunches (Primary, Intermediate, and Secondary). In fact, clients will find that the arrangements of peculiarities describing the angles (left hand segment of every network) are to an extraordinary degree to the grids on which they show up. Moreover, the connections among the networks inside each single evaluation bunch remain genuinely detached, on the grounds that advancement happens at distinctive rates inside every area.

Bax (2003) contended that the strength of Communicative Language Teaching (CLT) has prompted the disregard of one critical part of dialect instructional method, to be specific the connection in which that teaching method happens. Moreover, contended that the time is now, time to supplant CLT is the focal ideal model in dialect instructing with a Context Approach which puts connection at the heart of the calling. At long last, contended that such a movement is now occurring and that it will fundamentally change the practice.

Karim (2004) researched the discernments of English as Foreign Language (EFL) instructors mentality and desires with respect to CLT in post-optional instruction in Bangladesh. The exploration questions for this study were: (a) what are the view of the partaking post-optional EFL instructors about the standards of Communicative Language Teaching (CLT)?, (b) what do these educators accept are the practices that clarify open exercises?, (c) which exercises do these

instructors use in their classrooms?, (d) what do educators think are the fundamental obstructions in executing CLT strategy in Bangladesh?, (e) what do they think are the regions of triumphs and challenges in present English educating in Bangladesh?, and (f) what do they recognize as preparing requirements for the fruitful execution of CLT in Bangladesh? The members in the study were 36 college level EFL instructors. The fundamental instrument used to evoke information for the study was a composed survey. It was observed that instructors' view of informative exercises and CLT methodology related to their reported classroom hones. There are sure evidences that Bangladeshi EFL instructors are very much aware of the essential standards of informative dialect showing and they hone the major open exercises in the classroom. There were a few disparities between instructors' recognitions and practices uncovered in this study. These inconsistencies were not created by instructors' misguided judgments of CLT or their restricted information of CLT instructional method; but rather conceivably because of some useful reasons like absence of assets, conventional exams, unequipped and expansive classes, absence of backing from organization.

Hiep (2005) characterized the hypothetical essentials of CLT and described the issues that usually rose when CLT hypothesis was put into practice, planned to offer proposals to help EFL instructors in non-Western EFL settings create suitable CLT rehearses for their classrooms. At long last, it recognized the need to rethink CLT to suit the hypothesis to contrasting nearby conditions.

Holesinska (2006) reported the hypothetical foundation of showing technique concerning outside dialect learning with specific stress on routines that are requisitioned showing kids with learning handicaps (LD). This hypothetical part was isolated into two subcategories: the first one concerned the procedure of gaining from the adolescent learner's perspective, and the other one focused on the approach of educating. At long last, the work introduced useful decisions about the issue as well as helpful and pertinent materials for educators who have adolescent learners with learning troubles in the classroom.

Wiriyachitra (2006) concentrated on the part of English and the issues of English dialect instructing in Thailand and it additionally touched on the training changes which was identified with English dialect educating. At last, this study expressed what has been arranged or officially done to enhance the English dialect showing and learning circumstances in Thailand, currently and later on.

Graddol (2007) presumed that monoglot English graduates confront a depressing monetary future as qualified multilingual young people from different nations demonstrate further bolstering and have a good fortune compared to their British partners in worldwide organizations and associations. Close by that, numerous nations are bringing English into the essential educational program; however – most definitely – British schoolchildren and understudies do not give off an impression of being picking up more prominent consolation to attain fluency in different dialects. On the off chance that left to themselves, such patterns will reduce the relative quality of the English dialect in universal instruction showcases as the interest for instructive assets in dialects, such as Spanish, Arabic or Mandarin, develops and global business methodology outsourcing in other dialects, such as Japanese, French and German, spreads. The progressions identified, exhibited clear and significant difficulties to the UKs suppliers of English dialect instructing to individuals of different nations and to more extensive instruction business parts. As the worldwide training business stretches, the late log jam in the quantities of global understudies mulling over in the primary English-talking nations is liable to proceed, particularly if there is no successful key approaches to avert such slippage. Obviously, the impact of improvements in that course would not be constrained by the business and instructive divisions. Social and common contacts and comprehension would likewise be weakened. The suspicion of conceivable moves sought after searched by this study give all premiums and associations which try to sustain the learning and utilization of English with a premise for the desire to meet the outcomes of what could be an altogether different working environment in 10 years' chance.

Dahmardeh (2009) reported the findings of a study carried out how Iranian textbooks could be made more communicative. The textbooks referred to were three English language textbooks, which are currently used in Iranian Secondary Schools. Although the work has been done within an Iranian context, many suggestions could be applied to other foreign/second language situations. Moreover, this study included the Iranian ELT curriculum, the questionnaire survey (author's and teachers' perspectives as well as their discomfort will be addressed) as well as the introduction of

the English language course-books for secondary schools in Iran (topic, progression, structure of the lessons, types of exercises etc.). Then, it presented a discussion on the findings of this research which would be a detailed exemplary criticism and suggestions for changes in order to make the materials communicative. Finally, it revealed that there were many inconsistencies between the learners' needs, and the textbooks that are available for learning and teaching the English language, although a few of them are reliable.

De Caro (2009) purposed to impart the consequences of a little scale undertaking focused around managing understudies in the utilization of expressions through dialogues and readings, keeping in mind the end goal to enhance understudies' informative ability. In the study, the undertaking was connected to Universidad Santo Tomas Tunja, with one gathering of eleven Electronic Engineering understudies who was attending an undergraduate instruction program. Dialogues, meetings, and casual discourse or discussions were utilized in order to gather the information in this activity exploration study. The results showed that, by learning and utilizing a few phrases, the learners had the capacity build their insight about expressions, adopted new vocabulary, and enhanced their open aptitude.

Hakuta et al. (2009) composed rules to be useful to test engineers, project chairmen, psychometricians, and instructive offices as they worked to guarantee that appraisals were reasonable and legitimate for Ells. In the study, the rules concentrated on expansive scale content territory evaluations managed in the United States to understudies in evaluations K-12; in any case, huge numbers of the standards could be connected to different populaces and different appraisals. However, these rules expected to identify fundamental information of ideas by using instructive testing. In any case, a few segments might have been more important to a given gathering of experts than others and a few areas, such as the area on measurable contemplations, which might have called for nature with specialized ideas.

Kelly (2011) gathered a definite rundown of conceivable explanations behind the dialect taking in got from scholastic writing, strategy archives and dialect learners themselves in order to give an instrument which can be utilized in this manner.

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Cavus et al. (2011) depicted that these days, the instruction styles have no more limited to the immediate correspondence with the educator and passing on the learning in the classroom. That was because of the aftereffect of a central part of new advances, especially the improvement in telecom which has affected and changed each part of our life in the field of training in particular. The instruction has thought of a new philosophy of adapting, such as portable learning and Erealizing, which made access to the learning setting at anyplace and any time through the web in the wake of joining it with another versatile innovation. The point of this study was to utilize versatile innovation for creating a portable learning framework as a coordinated framework, giving learning administrations and utilizing WiFi system engineering. The model of this application comprised of homework, SMS, test and advertisement and sending Feedback to understudies. The technique of this study was made out of: (1) server side: its usefulness was the SMS and affirmations must have been initiated and sent instantly or consequently to the understudies by the teacher who was additionally capable to make and transfer tests with five inquiries and assignments showing to the time made and alter the understudies data, (2) Client side: understudies permitted to get to the server benefits, (3) The devices utilized as a part of outlining this framework were Netbeans IDE 6.5.1 java 2 standard version (Server part executing on desktop) and Netbeans IDE 6.5.1 java 2 micro release (portable piece of server). It explored that additional added adaptable peculiarities to the framework sped up the learning procedure.

Lo et al. (2011) studied the concepts of bingo game aiming at the development of the online multi-user for teaching English vocabulary.

Sandberg et al. (2011) proposed three gatherings which took part in a study on the included estimation of portable innovation for learning English as a second dialect for elementary school understudies. The primary gathering had classroom lessons in English about zoo creatures and their attributes. The second gathering took classroom lessons and worked with a versatile application on an area in an open zoo. The third gathering got the same treatment as the second; however, as an expansion, it was permitted to take the versatile application home for a fortnight. A pretest and a posttest led to a measure that the individual change in dominance of a set of focused on English words. The results demonstrated that the gathering which took the cell telephone the most successful in a home-based manner. On the other hand, when the extra learning time was used outside the school of the third gathering was controlled for, the predominant execution of the gathering vanished. The results demonstrated that understudies were propelled to utilize the application as a part of their extra time and that this provided

advantages for their learning. The conclusion is that formal school learning can be enlarged by adapting in a causal connection, far from school.

Lu et al. (2011) displayed a setting mindfulness multi-specialists based portable instructive amusement that can create an arrangement of learning exercises for clients doing On-the-Job preparing and that can make clients communicate with particular protests in their workplace. In addition, it uncovered multi-agent architecture (MAA) into the versatile instructive amusement configuration to attain the objectives of creating a lightweight, adaptable, and versatile diversion on the stage with restricted assets, such as cellular telephones. A situation with a few working environments, examination space, gathering rooms, and an assortment of things and gadgets on the eleventh carpet of a college's building was utilized to show the thought and system proposed. Towards the end, a poll was utilized to analyze the ease of use of the proposed amusement. 37 participants participated in this pilot study and the results demonstrated that they were intrigued by utilizing the amusement and the diversion helped them getting acquainted with the new environment.

Meluso et al. (2012) exhibited that amusements can possibly affect understudy adapting in STEM content ranges and that communitarian gameplay may be of a specific significance for learning advancement. Additionally, this study explored the impacts of collective and single amusement player conditions on science substance-learning and science self-efficacy. At long last, it showed that there were no contrasts between the two playing conditions; in any case, when conditions were caved in, science substance learning and efficacy towards oneself were significantly exponential.

Huang et al. (2012) created an omnipresent English vocabulary learning (UEVL) framework to aid understudies in encountering a methodical vocabulary learning process in which pervasive engineering was utilized to create the framework, and feature cuts were utilized as the material. A while later, the innovation acknowledgement model and incomplete slightest squares methodology were utilized to investigate understudies' points of view on the UEVL framework. The results showed that (1) both the framework qualities and the material attributes of the UEVL framework absolutely and fundamentally impacted the points of view of all understudies on the framework; (2) the dynamic understudies were intrigued by seen helpfulness; (3) the inactive understudies were intrigued by seen usability.

Ahmad et al. (2012) surveyed the English teaching methods at schools for children at the ages of 5 to 7 years old, and noticed that the most suitable method to teach these children in a motivated method and to make them spend more time was to investigate a bilingual game used in Android system, due to its speed, which was more and more faster than other systems.

Ma et al. (2012) displayed a computerized diversion based learning framework for secondary school understudies for their after-school adapting in English vocabulary. In this study, instructors just ought to guide understudies playing the diversion and showing styles were not to be changed. In the entire methodology, understudies outlined the learning blaze cards on Web without anyone else being present, played learning glimmer card diversion on cell phones and they compensated for breezing through the test with the amusement cards. They needed to play with the portable amusement by gathering or trading the diversion cards with other colleagues to complete the riddle and get prize cards. Prize cards were utilized to trade genuine pocket cash from their guardians or to approach the instructor for scores.

Ansarey (2012) presented an overview of English language teaching in Bangladesh, and then investigated the definition and principles of CLT which were followed by a brief history of CLT. In addition, it included a review of existing literature related to communicative competence, as well as the way how CLT functions was presented.

Vongxay (2013) explored the impression of English instructors in a Department of English and a careful investigation methodology was connected keeping in mind the end goal to investigate educators' understandings of CLT. Ten English instructors from one office in a Lao advanced education organization were questioned utilizing semi-organized meetings. The study thought about the writing about open English instructing with the discoveries of information gathered from these ten coordinated, top to bottom questions in the same setting. The findings showed that the variables that influenced the usage of CLT in the Lao connection identified with educators' elements included: Confusions of CLT, conventional linguistic use based showing approach, instructors' English capability and absence of CLT preparing. The issues raised from understudies included: understudies' low English capability, understudies' learning styles and practices, and the absence of inspiration to create informative ability. Different challenges created by the instructive framework were: The force of the examination, class size, and the inadequate financing to help CLT and the last variable brought about by CLT itself was the absence of CLT association in the public eye and school. The study additionally gave a scope of pragmatic proposals for the employee's dignitaries, senior chiefs at higher instructive foundations, service instructors and strategy creators to further enhance the usage of CLT and to help guarantee the accomplishment in executing this methodology in Lao higher instructive establishments.

From all the above researches, it has been noticed that learning English as a foreign language is a major problem in the entire world, and it is an important international language. Learning this language will open up the future for all education possibilities, work possibilities in European countries.

Erhel et al. (2013) demonstrated two experiments to decide which one is more effective for students to learn the English language as a game, and concluded that a serious game environment could promote learning and motivation, providing it includes features that prompt learners to actively process the educational content.

Wang et al. (2013) introduced a few points of interest of a preparatory usage of learning exercises utilizing a prevalent Mobile Virtual Environment Game, Minecraft, in a Hong Kong global auxiliary school Integrated Science class. Evidences were that the presentation of the versatile virtual environment amusement might in fact help learning enhancements and some other upgraded delicate results. Conceivable ramifications of the discoveries and future exploration were considered.

Escudeiro et al. (2013) went for the change of dialects and society abilities in respect to the utilization of e-promoting and e-business apparatuses, the foundation of relations through electronically upheld social stages and the consolation of enterprise. In light of a Serious Game approach that gave guideline based, proficient, genuine circumstances and connections of cooperation where the player tries to attain learning goals and enhance individual aptitudes and social skills.

Wodike et al. (2014) reported the findings of a study to empower teenagers to facilitate a heuristic evaluation with their peers acting as the expert evaluators. The results showed that teenagers struggled to act in the role as facilitator, struggling to explain the heuristic evaluation process and keep the evaluators on track. The evaluators found very few problems and became distracted from the evaluation opting to play on other features of the device rather than the game itself.

Al-Barashdi et al. (2015) reviewed the growing literature on Smartphone addiction among university undergraduates in order to identify trends. Only original research papers have been included in this literature review. The thematic structure has been adopted. In addition, this study reviewed the relationship between Smartphone addiction among undergraduates and their academic achievement. Finally, it examined the significant differences in addiction among undergraduates according to their gender, field of study, parent educational level and family income level. Chaiyasit et al. (2015) proposed three steps to improve the mobile learning application on Android as: 1) Developed the management system for mobile learning application on Android Operating System (OS) Tablets; 2) Evaluated the effectiveness of the management system for mobile learning application on Android OS Tablets; and 3) Surveyed teachers' satisfaction towards the management system for mobile learning application on Android (OS) Tablets.

Laketa et al. (2015) verified and assessed the quality of lessons in traditional and electronic text-book on general standards of textbooks quality. The method of theoretical analysis and content analysis was used. For the purpose of analyzing, the contents of the sample took teaching unit measures and measurement from two textbooks: The traditional and the electronic. The electronic text-book, which has been the subject of research, was of quality and met the standards of textbook quality.

Marshall et al. (2015) built an interdisciplinary community of researchers, designers, and practitioners to share and discuss their work. Additionally, this study sought to explore the interaction between playing and wellbeing in the context of interaction design and children and it also intended to identify directions for future research.

Read et al. (2015) proposed a course where the participants would learn about theory and practice of conducting research in children Human Computer Interaction (HCI). Moreover, the course was divided into two sessions: basic principles and theory, and best practices. The instructors had multiple years of experience designing, conducting, and analyzing children-computer interaction (CCI) studies, in the UK, USA, and Israel.

Shalamanoski et al. (2015) presented the design and implementation of a three dimensional (3D) educational game that aimed to help pupils to improve their mathematical skills. In this study, the game was simple to use and easy to navigate, but at the same time the kids felt a rich game environment, which rendered the experience better. In order to increase the availability, the game requires simple installation and can be played directly on the web browser.

Sim et al. (2015) focused on the effectiveness of the heuristic evaluation method for the evaluation of computer assisted assessment (CAA) systems and the study proposed a set of CAA heuristics for evaluating assessment tools. The results of these tests showed that, with little training, novice evaluators could effectively perform an evaluation and use this heuristic

set and could identify genuine usability problems within the assessment tool. Therefore, educational technologists or software developers could use the new CAA heuristic set to aid their procurement or inform their design decisions.

Sokolowski (2015) examined the effects of applying mathematical modelling to support student math knowledge acquisition at the high school and college levels. A subsequent moderator analysis revealed the differences of the effect sizes due to different modelling designs. In the meantime, the aim of the modelling process, grade levels, and content domains.

CHAPTER 3 THEORETICAL FRAMEWORK

3.1 Mobile Technologies

This section explains the new technology of the Mobile system as a reshaping, communication, and an economic aspect in the world. This technology is considered to be smartphones, tablets as well as desktop computers (Speckmann, 2008). This sophisticated digital technology gives users the ability to build their own businesses, control their financials, their health, and online transactions (Gilski et al., 2015). These devices support users in order to minimize the social inequality as much as maximizing in civic lives, and maximized the level of education. This new technology resulted in avoiding the use of desktops and the laptops, as much as they shifted to these handheld systems (Nimodia et al., 2012).

This switch to the handheld devices became real evident for users if anyone examines these lines according to personal computers (PCs). This is depicted as shown in Figure 3.1 which demonstrates the calculated numbers of the Internet Protocols (IPs) for desktops, laptops, and netbooks (Molina et al., 2013).



Figure 3.1: Iraqi communications sector (Dewachi, 2006)

Figure 3.1 shows the wide growth of Mobile operating systems and how this system exceeded the use of PCs and laptops which is almost more than three times of PCs.

3.2 Android Operating System

Google Android is considered as the new option and product of Google. This is considered as the first market for Mobile applications and it became almost parallel with the applications of Apple (Schmidt et al., 2009). Moreover, Android operating system is considered as the stack of

most of the mobile systems, their operating system, and the key applications. Android is a software stack for mobile devices that includes an operating system, middleware and key applications. In this way, the applications are used by Java Programming Language; thus, Android operating system is considered to be the most secure operating system in the near future more than the Apple operating system (Nimodia et al., 2012). Nowadays, smartphones are considered as developed functional systems (Gilski et al., 2015), while Android operating system is considered as the most with millions of users per year. Finally, Android operating system is considered as the most widely used system due to its advantages over other operating systems. These advantages can be listed as follows (Speckmann, 2008):

- Easy to use,
- Its almost freely available applications in the Google Store,
- More secure,
- Easy to program.

3.3 Text-to-Speech Convert

Pronunciation is the loudest silent part of a language which is generally not studied but used at all times. Thus, it received the attention of so many authors (Munro & Derawing, 2015). Moreover, the foreign people cannot pronounce the words well, but they can learn the Language in terms of grammar and vocabulary, so that pronunciation is significant in order to start any dialogue between teachers and their students (Khaghaninejad & Maleki, 2015). Pronunciation has always been neglected in Language learning compared to reading and writing skills, which were the mostly emphasized parts (Setter, 2008). However, some authors predicted that pronunciation is the important part in Language learning, and without pronunciation, it will be much more difficult to learn a foreign Language (Derwing & Munro, 2005; Seyedabadi, Fatemi & Pishghadam, 2015). Teaching the pronunciation in English as a foreign Language is considered as a must subject in order to transfer it in a perfect manner, which is also a new aspect to include technology. The important advantage of learning the pronunciation using Mobile devices is considered as a new technology as a first step, as well as being helpful for them to learn the language in its correct format so that it would be easier to communicate at different environments, such as vacations, holidays, and workplace (Liaw, 2014).

3.4 Learning the English Language using Mobile devices

Instructors have turned out to be progressively inspired by the learning benefits that versatile innovation can give to understudies all through classrooms (Engel et al., 2011). While there is impressive excitement for utilizing cell phones to bolster learning with their mixed media capacities, movability, availability, and adaptability, there is a scarcity of research confirmation about whether such portable innovation can encourage learning for K-12 understudies, particularly the English Language Learners (ELL) populace (Oliver, 2007). This contextual investigation analyzed how ELL instructors and their understudies at two center schools utilized the iPod touch to bolster their educating and learning and it investigated the potential advantages of utilizing such cell phones as an instructing and learning device. Utilizing numerous quantitative and subjective information sources from both educators' and understudies' points of view, the discoveries proposed that joining the iPod touch in ELL direction gave noteworthy support to enhanced learning limit alongside unmistakable difficulties (Karjaluoto, 2006). The outcomes demonstrated that, regardless of the difficulties, instructors confronted when coordinating the iPod touch in their guideline, versatile learning could convey one of a kind innovative and educational affordances to ELL understudies (Engel et al., 2011). On the other hand, Oliver (2007) expressed that the conveyance of courses and units through vast classes in on-grounds settings is a financial need for some advanced education foundations, especially inside their undergrad programs and addressed presentations to companions of more than 200 understudies are basic in many colleges. Such settings can display challenges for both learners and instructors. It is presently clear that versatile and remote advances can give chances to support, engagement and dynamic learning inside these settings. These advancements empower educators to cook for a scope of capacities, premiums and learning styles. In addition, portrayed exercises in an Australian college setting where versatile innovations have been utilized effectively to bolster learning as a part of expansive class ongrounds settings.

Karjaluoto (2006) assessed the hidden standards of third era (3G) versatile administrations. Given the accomplishment of second era (2G) portable correspondences frameworks and administrations, the third era versatile systems and applications are confronted with a ton of desires, such as giving omnipresent access to online administrations by means of versatile terminals. In any case, 3G advances and applications have experienced deterrents that have impeded both the innovation improvement and client acknowledgment. This paper audits existing writing identified with 3G and builds up a structure that exhibits the variables that add

to the accomplishment of 3G. The discoveries give understanding into the advancement and promotion of 3G administrations.

Cell phones have become ubiquitous within our society, and many would now consider them as a necessity rather than a convenience (Weber et al., 2011). This widespread use of cell phones and other mobile communication devices has brought along an increasing acceptance of their use in virtually all social situations (Pinchot et al., 2010). It is no longer taboo to be caught with a ringing cell phone at a dinner with family and friends, at a sporting event, or even during a church service. Incoming calls are no longer seen as interruptions of the primary activity taking place, but they are instead treated as equally important communications (Engel et al., 2011).

3.5 Mobile Learning System

Mobile phones have a rather small screen size, which is one of the reasons it is highly difficult to deal with it in writing any application. In the study, information was gathered through an overview including 56 respondents, and this information was broke down by utilizing SPSS 12.0. The findings demonstrated that the respondents were exceptionally open to the intelligence, availability, and comfort of the framework, yet they were very baffled with the infrequent interferences due to the web network issues. The portable learning framework can be used as modestly in general; however, it would be more beneficial to utilize a powerful learning instrument as a supplement that would render the students' learning procedure more beneficial and superior (Hanafi et al., 2012). In terms of the screen size of mobile phones, different applications suitable for all kinds of Mobile systems can be used to fit to different sizes of screens (Khaddge, Chonka & Zhou, 2009). In most educational applications using Mobile system, the screen is kept constant so that it will be usable by all users with different mobile phone screen sizes in order to render everyone comfortable (Saunders, 2013).

3.6 Information-Gap Activity in English as a Second Language for Children

Speaking is the methodology of building and imparting importance through the utilization of verbal and non-verbal images, in a mixture of connections (Chaney, 1998). Speaking is a critical piece of second dialect learning and instructing. Notwithstanding its significance, for a long time, teaching speaking has been underestimated and English dialect educators have kept on showing speaking generally as a redundancy of drills or retention of dialogues (Ahmed et al., 2013). Nonetheless, today's reality obliges that the objective of teaching speaking ought to be enhanced for the development of students' informative aptitudes, in light of the fact that
students can communicate and figure out how to take after the social and social tenets proper in every open condition (Cullen et al., 2000). Keeping in mind the end goal to show second dialect learners how to speak in the most ideal way imaginable, some speaking exercises are given beneath, that can be connected to English as a second language (ESL) and *English as a Foreign Language* (EFL) classroom settings, together with proposals for teachers who show oral dialect (Lee, 2000).

Presently numerous semantics and ESL teachers concur on that students figure out how to speak in the second dialect by cooperating. Informative dialect showing and synergistic learning serve best for this point (Doman et al., 2005). Informative dialect education is taking into account genuine circumstances that oblige correspondence. By utilizing this system as a part of ESL classes, students will have the chance of corresponding with one other people in the target dialect. In other words, ESL teachers ought to make a classroom situation where students have a genuine correspondence, real exercises, and significant assignments that advance oral dialect. This can happen when students work together in gatherings to attain to an objective or to finish an assignment (Kourieos, 2014).

After a substance based lesson, an examination can be held for different reasons. The students may expect to touch base at a conclusion, offer thoughts regarding an occasion, or discover an arrangement in their exchange bunches (Lankaran et al., 2015). Prior to the examination, it is crucial that the reason for the speaking action is situated by the instructor. Along these lines, the dialogue focuses are important to this reason, so students do not invest their time talking with one another about superfluous things (Lo et al., 2011). Case in point, students can get to be included in concur/differ discourses. In this kind of examinations, the educator can structure gatherings of students, ideally 4 or 5 in every gathering, and give questionable sentences like individuals learn best when they read versus At that point every gathering chips away at their subject for a given time period, and presents their suppositions to the class (Ma et al., 2012). It is crucial that the talking ought to be just as separated among gathering individuals. Toward the end, the class chooses the winning gathering that safeguarded the thought in the most ideal way. This action encourages discriminating intuition and brisk choice making, and students figure out how to express and legitimize themselves in pleasant ways while contradicting the others. For productive gathering examinations, it is constantly better not to structure expansive gatherings, on the grounds that calm students may abstain from contributing in huge gatherings. The gathering individuals can be either appointed by the instructor or the students may focus it independent from anyone else, yet gatherings ought to be reworked in every speaking action with the goal that students can work with different individuals and figure out how to be interested in distinctive thoughts. Finally, in class or gathering discourses, whatever the point is, the students ought to dependably be urged to make inquiries, rework thoughts, express help, and check for illumination (Matsumoto, 2009).

In this action, students should be working in sets. One understudy will have the data that other accomplice does not have and the accomplices will impart their data (Meluso et al., 2012). Data crevice exercises fill numerous needs, for example, tackling an issue or gathering data. Additionally, every accomplice assumes an imperative part on the grounds that the undertaking cannot be finished if the accomplices do not give the data the others require. These exercises are successful in light of the fact that everyone has the chance to speak broadly in the target dialect (Patrick et al., 2015).

Just about everyone loves playing whether they are youthful or old. From ahead of schedule youth having a gigantic influence of most kids' lives and it has huge impact of their advancement also. Kids begin playing as ahead of schedule as early stages however as they create all through their adolescence they continue playing, and as they grow up and develop the way of their play changes. At the point when kids enter center adolescence (6-8) their play begins to change into amusements which are unique in relation to play as in they are more composed and arranged, and they for the most part incorporate a variety of guidelines and a particular goal (Wang et al., 2013). At the point when playing most amusements members are verging on constrained into corresponding with one another all together for the diversion to work. The requirement for correspondence amid recreations, and the casual setting amusements give urges understudies to be unafraid to talk, which rehearses their familiarity, an important correspondence expertise. The national educational modules for remote dialects in Iceland accentuate the significance of learning dialects and particularly the significance of correspondence (Stojan et al., 2012). In light of this it is fundamentally essential for educators to make a positive learning environment, and to attempt to start premium amongst their understudies both in the outside dialect and society on the grounds that that is imperative to a fruitful dialect learning procedure. Diversions accomplish these objectives as they fulfill the national prerequisite educational modules that dialect learning ought to be agreeable for understudies (Simpson, 2015).

There are considerable measures of definitions what the amusement is. Everybody has the capacity envision something when listening to the term amusement yet to give an exact definition is troublesome. The meanings of Games are fun is straightforward and accurate (Shahriarpour et al., 2014). Deciphers the recreations like exercises that include play and satisfaction, who comprehends the recreations like exercises represented by guidelines, which set up obviously characterized objectives, where the accomplishment of these objectives flags the diversions end (Sandberg et al., 2011). Recreations include a challenge either between players or between the players and the objective, and amusements ought to prompt having some good times. Essentially yet communicating the same is the meaning of (Patrick et al., 2015) who clarifies the diversion as an action with tenets, an objective and a component of fun. However the diversion in instruction must be more than just fun; learners need to learn through playing recreations, as well. Wright, (Meluso et al., 2012) highlight that pleasure in amusements is not limited by age but rather it relies on upon the diversions' fittingness. (Ma et al., 2012) declares amusement as the path how to give dialect something to do and bolsters this sentiment with known long history of dialect play that is material so for the youngsters concerning grownups and some of them can be exchanged from first dialect to second and remote dialect as well. Diversions are firmly associated with inspiration. It is clear then that recreations since youngsters actually need to play them-can be inspiring. Lu et al. (2011) underpins this feeling by the announcement that agreeable action is critical then and the conceivable achievement that the kids could achieve in dialect learning will create inspiration for their further learning. (Lankaran et al., 2015) helps to remember the way that amusement and adoration are the fundamental exercises of our lives and the diversion is the objective for itself not just the instrument how to achieve the objective. Nonetheless he underscores that academic estimation of the amusement is seen by enacting conceivable outcomes. The consequences of mental and pedagogical looks into, it can say that to characterize the term diversion is not basic and in like manner the utilization of it can be dangerous. It has focal points on one side yet there exist numerous components that can impact utilizing diversions either decidedly or contrarily (Laketa et al., 2015).

3.7 Advantage of Using Game in English Teaching for Children

Using game as an educator method for learning especially the English language in the Middle East region has so many difficulties and more advantages (Ahmad et al., 2012). The idea is that, the games can focus on more and more subjects and topics of the languages, as grammar, speaking, listening and the vocabulary (Alemi, 2016). For the children, the teaching the English

language is more important than teaching them the grammar as a game based (Erhel et al., 2013). The successful teaching methods are the motivated methods used for the children, to make them getting the informational atmosphere to play game inside the lesson. Moreover, the lesson as a game to depend on the challenge between the children will give more effort and more advantages in teach (Alhassan et al., 2016). The idea is that, the children enjoy playing and even they do not notice that they finished the simplicity and they started with the difficulties of the game. They are just obeying the rules of the game without understanding that they finished the level and they started with a new one (Engel et al., 2011). Just they know that they finished the game and with good scores to compare themselves with their friends in the class (Carlos et al., 2013).

Where, the advantages of using games in the class to teach the children can be summarized as:

- Games have the addition of variety for the range of the learning positions.
- Games the required level of motivation.
- Games have the ability to refresh the children during the learning process.
- Games have the ability to encourage the children who have intimidated by normal classes.
- Games have the ability to decrease the distance between the children and the teacher.
- Games can be used as a tester mechanism for the capacity of the children.

3.7.1 Games in English Language Teaching and its Uses

Games have many advantages as mentioned above, and the uses of these games in the class to teach the children also have disadvantages. The uses of games in the class have some options to get the high score in teaching the children. The perfect method in using the games as a method to teach the children in the class is to use these games as a revision for the previous lessons or as a summary for the given lesson (Noels, 2015). Also the teacher can use the games for the entire lesson; this depends on the capacity of the teacher in explaining the lesson for the children. Some teachers like to divide the lesson to two parts, one for studying and the second part for fun. In this area of dividing the lesson to two sections, some problems noticed that students are neglecting the studying part and intending to concentrate on the fun one. For this reason, the teacher must be attentive for the reaction of the children and the atmosphere in order to maintain the children with high concentrate for the given lesson and not to be neglected and waited till the fun part of the lesson (Meluso et al., 2012).

In this thesis, the proposed game has the ability to be well organized to give the ability for the teacher to prepare well and thoroughly to get the attention from the children, not to get bored while playing. For this reason, the proposed game has the facility to be connected with an overhead projector to give the teacher first to explain how to start with the game and the purposes of the game. The proposed game also gives the teacher the ability to check the prepared information are well prepared and are suitable with the age of the children to get higher scores in the teaching process.

3.7.2 Accuracy as well as Fluency

It might also be argued that the extent of some of the structures or functions may never be used in real life. One example is adjective order; one teacher while questioned gave the following example, and has given students an exercise where they have to produce a phrase with a string of adjectives, such as a strong, orange, Norwegian, canvas tent. This is very unnatural, as most times they only combine two or three adjectives. The other example is directions – they have students follow a map and negotiate exhaustive directions which suggest maze-like complexity. In reality, most of us probably are only involved in a three-phase set of directions. In fact, what we are doing with these exercises is exposing students to patterns which they can later activate (Kourieos, 2014).

This focus on accuracy versus fluency is one of the issues not often considered in a discussion of communicative English teaching (CLT). The teacher decides to pay attention to one or other end of this band, depending on the type of lesson, or the stage of a particular lesson, and accuracy is their choice if they want to deal with students getting things right, take an opportunity for correction, or gauge the success of their teaching, for example. Freer speaking involves more choice, therefore more ambiguity, and less teacher intervention. While CLT implies the lessons are more student-centered, this does not mean they are un-structured. The teacher does have a very important role in the process, and that is setting up activities so that communication actually happens. There is a lot of preparation; accuracy practice is the bridge to a fluency activity. By implication, CLT involves equipping students with vocabulary, structures and functions, as well as strategies, to enable them to interact successfully (Doman et al., 2005).

The reference to strategies introduces the matter of grammatical versus communicative competence. If we view the two as mutually exclusive, then we are likely to champion one over the other, in terms of approach, curriculum or whatever else determines and defines our classroom teaching. In fact, Canale and Swain model of communicative competence, referred

to by Guangwei (2014), includes four sub-categories, namely grammatical, sociolinguistic discourse and strategic. They consider someone competent in English should demonstrate both rules of grammar and use.

3.7.3 Promoting Learning

This returns us to the consideration of who we are teaching, and why. Are our students aiming to learn or acquire English? Do they need to know lexical items and linguistic rules as a means of passing an exam, or do they want to be able to interact in English? For those inclined to maintain the dichotomy between learning and acquisition, and who argue that our primary focus is learners, CLT still has relevance. It is timely to review an early definition of CLT. According to Richards and Rodgers, in Guangwei (2014), CLT is basically about promoting learning.

Then again, Lowe (2014) suggested that to follow Halliday lead and drop the distinction between learning and acquisition, and refer to language mastery instead. After all, if the students master the language, they will certainly be able to perform better in exams, if that is their goal. In addition, those who do see a purpose beyond classroom-related English will be better equipped for using the language socially.

3.8 Aligning for Student Success

In order to start building and sustaining schools which support any student to chieve the required success, the families must get help from the teachers, with community friends and with partners in order to collect all the promising practices and the meaningful contents. The major subjects focus on the English learning as much as mathematics as a common state for the standards as shown in Figure 3.2.



Figure 3.2: Relationship between vision, principles, process and contents (Evers, 2011)

In this process, each one is a responsible for every child graduating and be ready to enter the school with a success and high scores. This gives the teachers in the future study for these children to be more comfortable and more effectively supporting these kinds of students. Figure 3.1 explains the mentioned processes when they are connected together to get a common purposes of education.

3.8.1 Each Child is a Graduate

The proposed game offers the children the ability to be successful in their future schools so that they are goin got be graduated and to be in good situations in their career, as much as the English language is considered as the international language and the basic concepts for the children in the future to be success in their universities. This reason came from so many studies done for our children especially in the third level countries, so that the English language is the second language in their schools.

When there will be a continous communication between the families and the teachers especially in the period before the school life, then the results will be as it is required from the children.

3.8.2 Guided by Principles

In this section, the educational processes are guided as well as getting the required activity and scores, so that the children can be well educated to be ready to enter the schools with high level of education especially the English language for its importance in the schools. This guiding principles for all members as parents as a first part in the children's lives and teachers as a second step in the educational process. This process is the most important process for guaranteed education and graduated children, this process when is made and controlled well, then the future children will be in a higher level in their education and their future life.

3.8.3 Ensuring the Success for the Students

In this thesis and the proposed game have a plan and a purpose to ensure that each child in the range of 6-8 years old to get a high quality education in learning the English language as a second language to be ready for the schools period. In the proposed game, the balance in teaching the English language for the selected ages is fully instructed. The proposed game helps the children to concentrate as much as obtain the required goal in learning the English language, as much as get high scores in the quizzes included. Below, the essential elements of the high quality instruction included as a voice by animated animals:

- Balanced assessments and
- Collaboration interact within the multi-levels

These elements ensure that the children can receive high level of education even before entering the schools, because this level is more important as the basement for the children in their schools to get high level education. According to the research done, the proposed game is legally equipped by all instructions so that the children will be more motivated to play it and passing its tests, the proposed game is balanced assessment and collaboration that can be more powerfully if organized to support all students.

3.9 Early Learning and Development Standards

In this thesis, the proposed game depends on the early learning and development (ELD), where the ELD is the development process of the children even from the age of birth, while in this thesis, it is considered as the period of the development for the children before starting their school life in order to be ready. These developments including the proposed game in this thesis serves as the guide game for the children to learn the English language with a stated of funny in order to make them like the learning process. Even the proposed game can be considered as the guide for the adults as the families to teach them how to deal with their children, the growth process for their brains over the time and to provide the basis of planning experiences and all the support through the childhood period. The proposed game has the facility to serve all children all over the world, no matter his address; he / she can play and enjoy learning the English language. While the governmental schools and the early education have the leakage of teaching like this model of games in order to attract the children, for this reason, the proposed game has the originality in teaching the English language in the early ages. The proposed game is going to be as a text material for the governmental schools after the presentation will take place, in order to improve these kinds of schools and prepare the children for higher level of education.

3.9.1 Supplement Dual Language Development

In this thesis, the proposed game includes the consideration that children in this range of ages, do not learn skills, as much as the support is provided for more than the wide variety of skills children are going to learn. The proposed game planned and designed for early learning in reading and writing, especially the characters of the English language and how to spell the words professionally. Moreover, the families will get the early learning and the early caring about their children. As mentioned previously, the plan is done especially for the children who

have dual languages as the English and the Arabic languages. This supplemental of the language as a second language depends on the development framework in order to support these children, rather, the proposed game is designed so that to raise the awareness's of these typical stages of acquiring a second language.

3.9.2 Intentionally Supporting the Growth and its development

The mentioned Early Learning and Development Standards (ELDS) which provide all basics for the learning environments, the support of the children, and even the communication around all known goals, while the un existence in the isolation and they must be used in the conjunction with all guidelines for more effective strategies. Where, the cycle for the international teaching is shown in Figure 3.3 which is composed of the plans for teaching the children in order to improve their brains and make them ready for their school lives, as much as collecting this information about the progress in the education in order to improve it if needed.



Figure 3.3: Intentional teaching cycle (Taylor, 2013)

As known, teachers in the governmental schools and in their classes might develop detailed learning and use them as tools for explanation and as an assessment equipment to make their classes funny for the children; for this, the proposed game is prepared to be funny as possible and attractive tool to attract the concentration of the children and to be meaningful process in teaching them. The proposed game is prepared to be played by the children in their houses with their families to prepare these children for their school lives.

CHAPTER 4 PROPOSED MODEL DESCRIPTION

4.1 Introduction

The new technology gave the parents not only the teachers the responsibilities for teaching their children to prepare them to be ready for school lives, any of these duties as printable sheets available in the shops and their plans to teach the children several kinds of education as English language, Arabic language and mathematics, these available books have the aim to improve the vocabulary, tenses and some speech skills. Nowadays, the improvement of the technology so that it is available everywhere, especially the games available in the apple store or google stores, also give the children the ability to learn and get benefit of these games as (Al-Ramahi et al., 2015; Angell et al., 2015; Patrick et al., 2015 & Simpson, 2015).

Some of these games are online, these online games are well designed and have the same target, but the idea obtained from these online games is not the idea with its full target. The grounds for these online games are the youngsters must be related with internet all the time and the children get bored of using the laptops or personal data processors. The mindset of the children is to wager with their parents' mobiles or tablets more than separated computers to be in one place (Wang et al., 2013).

The study surveyed most of published theories that mention the teaching methods for children and which method is more successfully cultivated. It is found that the English based games have the ability to teach kids more proficient than the standard formats such as textbooks or even printed games (Lo et al., 2011).

4.2 Structure of the Developed System

The proposed system consists of five main parts, each part includes several processes. The main parts are:

- Study,
- Exercises,
- Pronunciations,
- Written,
- Main game as a review for the learned process.

While these main topics have a main goal which is teaching the children with ages between 6-8 years old the colors, transportation, and animals. In the learning process, the system explains the colors and the spelling of them, while the spelling has the same color of the appeared picture. Moreover, the transportation has several examples and pictures; also the system introduces them by voice and animation. Finally, the animal's part of learning also includes animation and voice of the system to introduce each animal. In the proposed system, the important part which is the system introduces the pictures with their spelling in order the child to learn the picture and its spelling with fun. The process is described in Figure 4.1.

Exercises following the same procedure of the three parts of colors, transportation, and animals. In the exercises part, the child has to move the picture to the required places that are same as matching process. While in the pronunciation part, the game depends on the voice of the child to spell the appeared picture, this process, connects google voice recognition with the pronounced word by the child. Finally, the written part depends on the saved words in the memory of the mobile system for comparison process.



Figure 4.1: Developed structure of the proposed application

4.2.1 Flowchart of the Developed System

The algorithm of the developed system is described in Figure 4.2.





4.2.2 Software Structure

The software structure for the proposed game is to teach the child how to pronounce the words perfectly, as much as to learn the written words in order to pass the level to the next one, otherwise, the child will repeat the same word as shown in Figure 4.3. If the child passes the first level of learning process, then he will come to an exercise for the same subject, this gives the child the ability to learn English language with lot of fun.



Figure 4.3: Software structure

4.2.3 Used Programming Language

The used programming language in this thesis is the Java high level language with a combination of eclipse to be suited for Android systems. Moreover, the database also used to save the pictures and the words in it. Global Mobile System (GSM) is used to support internet 3G and 4G in order to use Google speech system in pronunciation process.

4.3 How Does the Developed System Work?

This application has been performed at Near East University (NEU) in the Turkish Republic of Northern Part of Cyprus (TRNC) during the fall term September 2016. Android Operating System is used as a tool in this application to be loaded and developed by the author. The application is named as self-learning English as a second language via mobile devices. This application is designed and improved to teach the children in ages between 6-8 years old as a second language as vocabulary, pronunciation, writing, and listening while playing the application, very short music and voice from the system in order to attract the child while playing is designed. All these functions are added to the application according to (Korat, 2010), to motivate children (Davidson & Powell, 1986), and to increase of understanding the application easily (Butucea, 2014). The application plays a voice message in order to inform the child what is the next step for learning activity.

4.4 Target Age Group and Content

As the technology is rapidly increasing in the entire world, as much as the learning is increasing in the same level, so that it became mobile system dependent. This increase affected the children in the Eastern countries specially the Arabic countries. In Iraq as an Arabic country, this technology attached the schools through the children to the classrooms. In this study, some of teachers are met and some of these discussions were done. The opinions of most of the teachers specially for elementary schools are preferring the study through iPads, mobile so that they noticed that, children within 6-8 years old ranges are all time playing with their parents or elder brother's mobiles or laptops. From these notes, teachers prefer to give even homework to these students using the iPads or tablets. According to these notes, this study is prepared and planned to be improved according to this range of children, so that these children can learn the English language as a second language with a lot of fun and important reason without force to these children in order to learn. This range of ages for children as a psychological point of view, there is no need for doing things by force for them, especially education, this range likes to play with any new technology he/she sees with his/her parents. This application is improved for this age of children to make them happy while learning the English language. This improved application is prepared according to this range of ages to make them spend their time after school by things are with good effect for their future and their schools, not to spend their time with silly things and without gaining any nice and affective knowledge for their education.

Worlddidac Asia, (2015) expressed the digital game as an extreme power for learning tool, so that this mobile educational tool which enables the children and teachers in order to have higher benefits from outside the classrooms of education. This education includes the up to date information from schools and the access to crucial education resources, as much as real time participation tracking, all these can serve to encourage these children and affect their performance (Wang et al., 2013). Some applications do this job more obviously than other applications, but all applications do this to a certain extent (Simpson, 2015). In this improved

application, spelling part, meaningful pronunciation occurs because of children need to process and pass to the second level, while the improved tool is designed so that if the child fails in a pronunciation cannot pass to the second page, this gives the child the motivation to listen well and carefully in order to pass to the second step (Shahriarpour et al., 2014).

4.5 Description of the Proposed Game

The solution is found in this proposed model, to have a fun time while learning the English language in the classroom by playing educational games. The suggested example is going to be written in Java high level language with a combination of eclipse to be suited for Android systems as tablets and smart phones in society to give fun time for the pupils in the play time. The proposed game has the following advantages beside the important occasion, i.e. the references are mainly in English anyway:

- 1. The colors,
- 2. Complimentary transportation to and from the airport
- 3. Play with the animals.

Moreover, the proposed game with the planned intent, the youngsters will be professional in the names, colors, animals as written and addressed. And thus the proposed game includes a test for each tier. In the end, the children will go past a trial, including all stages together. The proposed game passes through three steps and each step contains:

- 1. Learning and experiencing new things
- 2. Several tests are proposed.

4.5.1 Learning

In this section, the first page of the proposed game is given in Figure 4.4. Where, the suggested model is chosen to be equally funny as possible. Moreover, the selected pictures in the proposed model give the child the motivation to continue his game in order to finish it and start with the exams. The proposed model has the marvelous game for the youngsters at the mentioned age ranges to train the kids to be ready for the school life, taking into consideration that the youngsters in these ages like to play with tablets and mobiles, the selected game using tablets to give the children the motivation to like working with the proposed game as much as learning the required plan done by the writer of the game.



Figure 4.4: The first photograph of the proposed game

The proposed model as mentioned earlier consists of several pages and several movies to have the concentration of the youngsters. When the kid pushes the next button, then a second photo seems to welcome the child by saying welcome to the universe of colors, this step includes teaching the colors as a beginning step by saying each color and the spelling of it. The mentioned screen is presented in Figure 4.5. As established, the system is talking with the youngster to capture his attention and gets down the play. When the child clicks on the start button to start the game in order to see another picture according to the animated plans, then the required by the game will cause its target by teaching the kid what is posited by the game.



Figure 4.5: Welcome screen of learning process

As noted earlier, the use of the proposed model is the motivated English language learning for kids. In this piece, the colors are going to come out one by one with its separated characters in an animated shape, and the character will say the color of the appearing shape. Moreover, the screen with the talking character will point the child what to do and then spell the characters of the color to usher the child how the appeared color to be spelled. The side by side, cover is presented in Figure 4.6.



Figure 4.6: Teaching colors and their spelling

Same picture again just the with other exemplars of each color as SKY blue color, APPLE green or reddish color, DRESS with white color, CAR with yellow color and so on as shown in Figure 4.7. Some other case for yellow color



Figure 4.7: Example for yellow color

While the proposed model consists of various videos and applications for teaching the English language starting from spelling the characters, also some examples about teaching colors and their spelling as shown in Figure 4.8.



Figure 4.8: Example for brown color

4.5.2 Testing

In this section, the testing part of the proposed model is presented as:

- Pronunciation, the child is going to say the presented color
- Writing, the child is going to write by his hand the appeared color
- Exercise, the child is going to bring what is required from the system to its place

4.5.2.1 Pronunciation Tests

The proposed model is represented by important ideas in order to teach the children what is required by the game. To improve and be sure that the target is obtained by the proposed game, some tests are done and improved to check whether the child learned what he played or not. The first test done is to say the color of the appeared picture, if the child says right, then a new picture appears to show the child that he wins with some music to get his/her attention of winning. A new page will appear to show the child that he/she finished learning and now the second step is the testing step. The coming picture is shown in Figure 4.9.



Figure 4.9: Color testing page



Some examples are shown in Figure 4.10 for the testing section.

Figure 4.10: Example of RED color test

The proposed model offers the ability to communicate with the tablet by voice, so that the child will gain the ability of saying the colors with right accent. According to the proposed game, the accent is adjusted in a high sensitive mode to increase the ability of the child to talk in high performance and well spelled words. While another example of color spelling test as shown in Figure 4.11.



Figure 4.11: Example of brown color

4.5.2.2 Writing Tests

In this section of the proposed model, the main target which is the writing mode to increase the ability of the child and improve his/her brain to memorize the spelling of the words and give him/her the ability to write what they memorized. Moreover, the published games have not this ability of writing the characters and cannot obtain the right target of the proposed games. The proposed model as a game has all these abilities in order to improve the child and prepare him/her to be ready for dictation tests in his/her school life. The proposed game prepares the child to be exactly and well learned child as the child in the European countries and as fluent in the English language. This gives the eastern child the ability to be with high performance as the European child. The proposed writing test is shown in Figure 4.12.



Figure 4.12: Example of writing test

Another example about the writing process in the proposed game to improve the ability of the child in writing the characters in the right form according to what he/she memorized from the previous stages of the proposed game. The next picture as an example of the writing skills is shown in Figure 4.13.



Figure 4.13: Another example of writing test

4.5.2.3 Exercise

In this section, the important target is to give the ability to the child in order to memorize the colors and their speaking accent. When the child gets the ability to read, write and spell, this means that the child can speak the word well and in its right accent. This is what is required by the proposed model which is teaching the child the characters, spelling them, writing them and then to hear them well. These specifications are not available in any proposed game through the internet or in any printed versions of textbooks. The proposed game, first the same picture to welcome the child for the matching process appears as shown in Figure 4.14.



Figure 4.14: Welcome to matching tests

The matching tests offer the child several colored pictures and colored boxes to ask the child to bring the colored picture to the appropriate color box, if the child brings the right colored picture to the right colored box, a nice music plays to show the child that he/she wins the test, else, a sad music plays to show him/her that he/she lost the test and returns back to ask again. The process is shown in Figure 4.15.



Figure 4.15: Example for exercise process

The proposed game as mentioned earlier has several tests; all aim to improve the ability of the child to memorize the characters of the English language even if it is a second language for him/her. The purpose of the proposed game is more than increasing the level of the child as much as preparing the child to be ready for the school life and with high level in order to get high scores in his classes. With the proposed game, the child will be with high quality in the English language in all types, as reading, writing, spelling, dictation, matching and listening. All these proficiencies will be available in the child after using the proposed game. Another example of matching process is shown in Figure 4.16.



Figure 4.16: Another example for exercise process

4.5.3 Transportation Test

In this section, the first page of the proposed game is given in Figure 4.17. Where, the suggested model is chosen to be equally funny as possible. Moreover, the selected pictures in the proposed model give the child the motivation to continue his game in order to finish it and start with the exams. The proposed model has the marvelous game for the youngsters at the mentioned age ranges to train the kids to be ready for the school life, taking into consideration that the youngsters in these ages like to play with tablets and mobiles, the selected game using tablets to give the children the motivation to like working with the proposed game as much as learning the required plan done by the writer of the game.



Figure 4.17: Main picture in the transportation section

In Figure 4.17, the user has to click on the start bottom in order to start the game; otherwise, the game will be idle.

When the user clicks on the next bottom, then the third picture will appear as shown in Figure 4.18 in order to teach the kid all transportations items, in this thesis, some of the transportation items were selected. As noted earlier, the use of the proposed model is the motivated English language learning for kids. In this piece, the colors are going to come out one by one with its separated characters in an animated shape, and the character will say the color of the appearing shape. Moreover, the screen with the talking character will point the child what to do and then spell the characters of the color to usher the child how the appeared color to be spelled. The side by side, cover is presented in Figure 4.18.



Figure 4.18: Teaching transportation and their pronouncing

While the proposed model consists of various videos and applications for teaching the English language starting from spelling the characters, also some examples about teaching transportations and their spelling as shown in Figure 4.18, same pictures again just with other exemplars of each kind as Plane, Ship, Bus, Car, Train, Motorcycle, and Helicopter as shown in Figure 19.



Figure 4.19: Ship Example for a kind of transportation

4.5.3.1 Pronunciation Tests

The proposed model is represented by important ideas in order to teach the children what is required by the game. To improve and be sure that the target is obtained by the proposed game, some tests are done and improved to check whether the child learned what he/she played or not. The first test done is to say the kind of the appeared picture, if the child says right, then a new picture appears to show the child that he/she wins with some music to get his/her attention of winning. A new page will appear to show the child that he/she finished learning and now the second step is the testing step. The coming picture is shown in Figure 4.20.



Figure 4.20: The coming picture welcoming the World of Tests

Some examples are shown in Figure 4.21 for the testing section.



Figure 4.21: Example of Plane test



Figure 4.22: Example of train test



Figure 4.23: Example of motorcycle test

4.5.3.2 Writing Tests

In this section of the proposed model, the main target which is the writing mode to increase the ability of the child and improve his/her brain to memorize the spelling of the words and give him/her the ability to write what they memorized. Moreover, the published games have not this ability of writing the characters and cannot obtain the right target of the proposed games. The proposed model as a game has all these abilities in order to improve the child and prepare him/her to be ready for dictation tests in his/her school life. The proposed game prepares the child to be exactly and well learned child as the child in the European countries and as fluent in the English language. This gives the eastern child the ability to be with high performance as the European child. The proposed writing test is shown in Figure 4.24.



Figure 4.24: Example writing test

4.5.3.3 Pronunciation Tests

The proposed model offers the ability to communicate with the tablet by voice, so that the child will gain the ability of saying the transportation tools with right accent. According to the proposed game, the accent is adjusted in a high sensitive mode to increase the ability of the child to talk in high performance and well spelled words. The proposed game tests the child to say the appeared picture in the application, this test was used to check the spelling pronouncing the word. An example is shown in Figure 4.25.



Figure 4.25: Pronouncing example

4.5.4 Animal Test

In this section, the first page of the proposed game is given in Figure 4.26. Where, the suggested model is chosen to be equally funny as possible. Moreover, the selected pictures in the proposed model give the child the motivation to continue his game in order to finish it and start with the exams. The proposed model has the marvelous game for the youngsters at the mentioned age ranges to train the kids to be ready for the school life, taking into consideration that the youngsters in these ages like to play with tablets and mobiles, the selected game using tablets to give the children the motivation to like working with the proposed game as much as learning the required plan done by the writer of the game.



Figure 4.26: Main picture in the animal section

When the user clicks on the next bottom, then the third picture will appear as shown in Figure 4.26 in order to teach the kid all animals, in this thesis, some of the animals were selected. As noted earlier, the use of the proposed model is the motivated English language learning for kids.

In this piece, the animals are going to come out one by one with its separated characters in an animated shape, and the character will say the color of the appearing shape. Moreover, the screen with the talking character will point the child what to do and then spell the characters of the animals how the appeared animal to be spelled.

4.5.4.1 Pronunciation and Writing Tests

The proposed model is represented by important ideas in order to teach the children what is required by the game. To improve and be sure that the target is obtained by the proposed game, some tests are done and improved to check whether the child learned what he/she played or not. The first test done is to say the kind of the appeared picture, if the child says right, then a new picture appears to show the child that he/she wins with some music to get his/her attention of winning. A new page will appear to show the child that he/she finished learning and now the second step is the testing step.

4.5.4.2 Pronunciation Tests

The proposed model offers the ability to communicate with the tablet by voice, so that the child will gain the ability of saying the transportation tools with right accent. According to the proposed game, the accent is adjusted in a high sensitive mode to increase the ability of the child to talk in high performance and well spelled words. The proposed game tests the child to say the appeared picture in the application, this test to check the spelling pronouncing the word.

4.5.5 Game Tests and Results

The improved application has another advantage in teaching the English language for children, which is the motivated process, the child when he answers right answer; a happy face supported with funny music is designed as shown in Figure 4.27, then the child can proceed to the next step. Moreover, when his/her answer is wrong, Figure 4.28 appears also with sad music and sad face to tell the child to try again, in this section, the game is not going to proceed to the next step unless the child answers right.



Figure 4.27: Right answer result

1 🖬 🔇 22°		C 🔍 🗎 17:57	
1	Wrong ! , Try Again		
REPEA	TRY AGAIN		•

Figure 4.28: Wrong answer result

Some of these games are online, these online games are well designed and have the same target, but the idea obtained from these online games is not the idea with its full target. The grounds for these online games are the youngsters must be related with internet all the time and the children get bored of using the laptops or personal data processors. The mindset of the children is to wager with their parents' mobiles or tablets more than separated computers to be in one place. In this section, the required target of the proposed game, which is teaching the child the English language in the right way and to have the ability of spelling, saying the word in its right form, and writing. The child has to finish all the tests in the game perfectly. If any mistake, the happens, the game will not give the permission to proceed to the next step, while the child passing these tests, the game is saving the results of failed and passed tests to appear the results at the end of the game as a table of results. The final results appear as shown in Figure 4.29.



Figure 4.29: Results of the game

CHAPTER 5 CONCLUSION and FUTURE WORK

5.1 Conclusion

In conclusion, the proposed game as a learning tool using Android operating system, proved that it helps the children at the age of 6-8 learn the English language as a second language in terms of pronunciation, writing, listening and matching, as these skills showed higher improvement in the learning process of using the designed and developed application. This improvement is significant in terms of statistical education for the mentioned aged children. The designed application using Android operating system is concerned and dependent on google speech recognition in order to obtain perfect results in pronunciation, as much as the writing process in order to be sure that the child memorized the word spelling well.

It is possible that the designed application is improved in several methods so that it can also help students learn English even till the age of 10 to 12 by increasing the number of examples in the learning process to teach them the words, their spelling, their pronunciation, and their writing. Moreover, this application will highly be effective for the young children who are genuinely interested in improving their English language as a second language so that they will not waste time trying to learn the language in other ways. Thus, it will be possible to benefit more by using this application. The designed application can be tested on children at different ages in order to obtain more accurate results. Finally, the study period can be increased to include extra learning materials within this application.

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APPENDICES

APPENDIX A

ANIMAL NAME ACTIVITY

package com.example.colors_learn;

import android.app.Activity; import android.content.Context; import android.content.Intent; import android.content.res.Resources; import android.graphics.drawable.Drawable; import android.os.Handler; import android.os.PowerManager; import android.speech.tts.TextToSpeech; import android.support.v7.app.ActionBarActivity; import android.os.Bundle; import android.util.Log; import android.view.View; import android.view.Window; import android.view.animation.Animation; import android.view.animation.AnimationUtils; import android.widget.Button; import android.widget.ImageView; import android.widget.RelativeLayout; import android.widget.TextView;

import java.util.Locale; import java.util.Timer; import java.util.TimerTask;

public class AnimalNameActivity extends Activity {

private static TextView tv ; private static ImageView img: static TextToSpeech t1,t2; private static String c = "This Animal Is "; private static int[] cimg; private static String[] fullname; private static String[] name; static int index = 1; public static Timer mTimer1; public static Handler mTimerHandler = new Handler(); public static TimerTask mTt1; static Context context; private static RelativeLayout imge; private static String x = "one": public static Timer mTimer2; public static Handler mTimerHandler2 = new Handler(); public static TimerTask mTt2; static Button go;

```
protected PowerManager.WakeLock mWakeLock;
  private static TextView ctv;
  public static Timer mTimer3;
  public static Handler mTimerHandler3 = new Handler();
  public static TimerTask mTt3;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
    getWindow().requestFeature(Window.FEATURE_ACTION_BAR);
    getActionBar().hide();
     setContentView(R.layout.activity_animal_name);
     final PowerManager pm = (PowerManager)
getSystemService(Context.POWER_SERVICE);
    this.mWakeLock = pm.newWakeLock(PowerManager.SCREEN_DIM_WAKE_LOCK,
"My Tag");
    this.mWakeLock.acquire();
    tv = (TextView) findViewById(R.id.textView1);
    img = (ImageView) findViewById(R.id.imageView2);
     go = (Button) findViewById(R.id.button1);
    imge = (RelativeLayout) findViewById(R.id.main);
    ctv = (TextView) findViewById(R.id.textView2);
     go.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View v) {
         // TODO Auto-generated method stub
         Intent intent = new Intent(getApplicationContext(), BringTestAnimal.class);
         onDestroy();
         t1.shutdown();
         stopTimer();
         stopTimer2();
         startActivity(intent);
         finish();
       }
     });
    context = this;
     \operatorname{cimg} = \operatorname{new}
int[]{R.drawable.monkey,R.drawable.dog,R.drawable.duck,R.drawable.rab};
     name = new String[]{"M O N K E Y","D O G","D U C K", "R A B B I T"};
    fullname = new String[]{"Monkey", "Dog", "Duck", "Rabbit"};
     speak(fullname[0], name[0]);
    ctv.setText(name[0]);
    img.setImageResource(cimg[0]);
    tv.setText(c+fullname[0]):
    startTimer();
    startTimer2();
     Animation animation = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.clockwise);
     animation.setRepeatCount(Animation.INFINITE);
```

```
}
  static void startTimer() {
    mTimer1 = new Timer(true);
    mTt1 = new TimerTask() {
       public void run() {
         mTimerHandler.post(new Runnable() {
            public void run() {
              if (index < 4)
              {
                 img.getLayoutParams().height = 0;
                img.getLayoutParams().width = 0;
                 img.requestLayout();
                 img.setImageResource(cimg[index]);
                 tv.setText(c+fullname[index]);
                 speak(fullname[index],name[index]);
                 Animation animation = AnimationUtils.loadAnimation(context,
R.anim.clockwise);
                 animation.setRepeatCount(Animation.INFINITE);
                 ctv.setText(name[index]);
                 index = index +1;
                 startTimer();
              }
              else
                 stopTimer();
            }
         });
       }
     };
    try
     {
       mTimer1.schedule(mTt1, 10000);
     }
    catch(Exception e)
     {
       Log.e("ERROR", e+"");
       stopTimer();
     }
  }
  protected static void stopTimer() {
    if (mTimer1 != null) {
       go.setVisibility(View.VISIBLE);
       speak2();
       mTimer1.cancel();
```

```
mTimer1.purge();
    stopTimer2();
  }
}
private static void speak (final String f, final String s)
ł
  t1 = new TextToSpeech(context, new TextToSpeech.OnInitListener() {
     @Override
    public void onInit(int status) {
       if(status != TextToSpeech.ERROR) {
         t1.setPitch(3.4f); // saw from internet
         t1.setSpeechRate(0.6f);
         t1.setLanguage(Locale.UK);
         String toSpeak = "This animal is "+" "+f+" "+s;
         t1.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
       }
     }
  });
}
static void startTimer2() {
  mTimer2 = new Timer(true);
  mTt2 = new TimerTask() {
    public void run() {
       mTimerHandler2.post(new Runnable() {
         public void run() {
            if (x.equals("one"))
            {
              x= "";
              x="two";
              Resources res = context.getResources(); //resource handle
              Drawable drawable = res.getDrawable(R.drawable.fffone);
              imge.setBackground(drawable);
            }
            else
            {
              x= "";
              x="one";
              Resources res = context.getResources(); //resource handle
              Drawable drawable = res.getDrawable(R.drawable.ffftwo);
              imge.setBackground(drawable);
            }
            img.getLayoutParams().height = img.getHeight()+35;
            img.getLayoutParams().width = img.getWidth()+35;
            img.requestLayout();
            startTimer2();
```

```
}
          });
       }
     };
//
              try
//
               {
    mTimer2.schedule(mTt2, 400);
//
               }
//
              catch(Exception e)
//
               {
//
                      Log.e("ERROR", e+"");
////
                      stopTimer();
//
               }
  }
  protected static void stopTimer2() {
    if (mTimer2 != null) {
       Resources res = context.getResources(); //resource handle
       Drawable drawable = res.getDrawable(R.drawable.fffone);
       imge.setBackground(drawable);
       mTimer2.cancel();
       mTimer2.purge();
     }
  }
  private static void speak2 ()
    t2 = new TextToSpeech(context, new TextToSpeech.OnInitListener() {
       @Override
       public void onInit(int status) {
         if(status != TextToSpeech.ERROR) {
            t2.setPitch(3.4f); // saw from internet
            t2.setSpeechRate(0.6f);
            t2.setLanguage(Locale.UK);
            String toSpeak = "now we will start the bring test";
            t2.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
          }
       }
    });
  }
}
```

APPENDIX B BRING FINAL

package com.example.colors_learn;

import android.app.Activity; import android.content.ClipData; import android.content.ClipDescription; import android.content.Context; import android.content.Intent; import android.content.res.Resources; import android.graphics.drawable.Drawable; import android.os.Handler; import android.os.PowerManager; import android.speech.tts.TextToSpeech; import android.support.v7.app.ActionBarActivity; import android.os.Bundle; import android.util.Log; import android.view.DragEvent; import android.view.View; import android.view.ViewGroup; import android.view.Window; import android.widget.ImageView; import android.widget.LinearLayout; import android.widget.TextView; import android.widget.Toast;

import java.util.ArrayList; import java.util.Locale; import java.util.Random; import java.util.Timer; import java.util.TimerTask;

public class BringFinal extends Activity implements View.OnDragListener, View.OnLongClickListener { protected PowerManager.WakeLock mWakeLock: private ImageView img1, img2, img3, img4; private TextView tv1, tv2; private static int[] cimg; private static int[] cimg2; private static String[] fullname; private static String[] name; private static int[] num; int num1=0, num2=0; Random random = new Random(): int min=0, max =0; private ArrayList<Integer> arraylist; private LinearLayout right, left; private static final String image1 = "num1";

```
private static final String image2 = "num2";
  private String clicked="";
  SoundClass sou;
  static TextToSpeech t1;
  static TextToSpeech t2;
  static Context con;
  private Boolean one=false, two=false;
  private static LinearLayout imge;
  private static String x = "one";
  public static Timer mTimer1;
  public static Handler mTimerHandler = new Handler();
  public static TimerTask mTt1;
  static Context conext;
  int tr=0,fa=0;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
    getWindow().requestFeature(Window.FEATURE_ACTION_BAR);
    getActionBar().hide();
     setContentView(R.layout.activity_bring_final);
    final PowerManager pm = (PowerManager)
getSystemService(Context.POWER SERVICE);
    this.mWakeLock = pm.newWakeLock(PowerManager.SCREEN_DIM_WAKE_LOCK,
"My Tag");
    this.mWakeLock.acquire();
    imge = (LinearLayout) findViewById(R.id.main);
    conext = this;
    startTimer();
    \operatorname{cimg} = \operatorname{new}
int[]{R.drawable.monkey,R.drawable.plane,R.drawable.ship,R.drawable.rab,R.drawable.yello
w box,R.drawable.white box};
    \operatorname{cimg} 2 = \operatorname{new}
int[]{R.drawable.banana,R.drawable.sky,R.drawable.sea,R.drawable.banana,R.drawable.yello
w bring, R. drawable. white bring};
     name = new String[]{"B L U E","B R O W N", "P I N K","R E D","Y E L L O W","W
HITE";
    fullname = new String[]{"monkey","plane","ship","rabbit","Yellow","White"};
    sou = new SoundClass(BringFinal.this);
     con = this:
     speak(fullname[0], fullname[1], "");
    img1 = (ImageView) findViewById(R.id.imageView1);
    img2 = (ImageView) findViewById(R.id.imageView2);
    img3 = (ImageView) findViewById(R.id.imageView3);
```

```
img4 = (ImageView) findViewById(R.id.imageView4);
```

```
right = (LinearLayout) findViewById(R.id.t1);
  left = (LinearLayout) findViewById(R.id.t2);
  right.setOnDragListener(this);
  left.setOnDragListener(this);
  img1.setImageResource(cimg[0]);
  img2.setImageResource(cimg[1]);
  img3.setImageResource(cimg2[0]);
  img4.setImageResource(cimg2[1]);
  img1.setTag(image1);
  img2.setTag(image2);
  img1.setOnLongClickListener(this);
  img2.setOnLongClickListener(this);
}
@Override
public boolean onDrag(View v, DragEvent event) {
  Drawable normalShape = getResources().getDrawable(R.drawable.normal_shape);
  Drawable targetShape = getResources().getDrawable(R.drawable.target_shape);
  Log.e("CLICKED", clicked);
  switch (event.getAction()) {
    case DragEvent.ACTION_DRAG_STARTED:
       break;
    case DragEvent.ACTION_DRAG_ENTERED:
       v.setBackground(targetShape);
                                      //change the shape of the view
       break;
    case DragEvent.ACTION_DRAG_EXITED:
       v.setBackground(null);
       break:
    case DragEvent.ACTION_DROP:
       if(v == findViewById(R.id.t1)) {
         if (clicked.equals("img2"))
         {
           one = true;
           if (one)
           {
              if (two)
              {
                Intent intent = new Intent(this, BringFinal2.class);
                intent.putExtra("false", fa);
                intent.putExtra("true", tr);
                onDestroy();
```

```
73
```

```
stopTimer();
                   startActivity(intent);
                   finish();
                 }
              }
              View view = (View) event.getLocalState();
              ViewGroup viewgroup = (ViewGroup) view.getParent();
              viewgroup.removeView(view);
              LinearLayout.LayoutParams layoutParams = new
LinearLayout.LayoutParams(50, 50);
              view.setLayoutParams(layoutParams);
              Log.e("T1", "here t1 Dropped");
              LinearLayout containView = (LinearLayout) v;
              containView.addView(view);
              view.setVisibility(View.VISIBLE);
              LinearLayout left = (LinearLayout) findViewById(R.id.left);
              left.setWeightSum(2);
              sou.playSound(R.raw.right_crowd);
              tr+=1;
            }
            else
            {
              sou.playSound(R.raw.wrong_crowd);
              fa += 1;
              Toast.makeText(getApplicationContext(), "Wrong, Try Again !",
Toast.LENGTH_LONG).show();
            }
          }
         else if(v == findViewById(R.id.t2)) {
            if (clicked.equals("img1"))
            {
              two = true;
              if (one)
              {
                 if (two)
                 {
                   Intent intent = new Intent(this, BringFinal2.class);
                   intent.putExtra("false", fa);
                   intent.putExtra("true", tr);
                   onDestroy();
                   stopTimer();
                   startActivity(intent);
                   finish();
                 }
              }
              View view = (View) event.getLocalState();
              ViewGroup viewgroup = (ViewGroup) view.getParent();
              viewgroup.removeView(view);
```

```
LinearLayout.LayoutParams layoutParams = new
LinearLayout.LayoutParams(50, 50);
              view.setLayoutParams(layoutParams);
              Log.e("T2", "here t2 Dropped");
              LinearLayout containView = (LinearLayout) v;
              containView.addView(view);
              view.setVisibility(View.VISIBLE);
              LinearLayout left = (LinearLayout) findViewById(R.id.left);
              left.setWeightSum(2);
              sou.playSound(R.raw.right_crowd);
              tr+=1:
            }
           else
            {
              sou.playSound(R.raw.wrong_crowd);
              fa + = 1;
              Toast.makeText(getApplicationContext(), "Wrong, Try Again !",
Toast.LENGTH LONG).show();
            }
         }
         break;
       case DragEvent.ACTION_DRAG_ENDED:
         v.setBackground(null); //go back to normal shape
       default:
         break:
     }
    return true;
  }
  @Override
  public boolean onLongClick(View v) {
    if (v == img1)
     {
       clicked="":
       clicked="img1";
       ClipData.Item item = new ClipData.Item((CharSequence)v.getTag());
       String[] mimeTypes = { ClipDescription.MIMETYPE_TEXT_PLAIN };
       ClipData data = new ClipData(v.getTag().toString(), mimeTypes, item);
       View.DragShadowBuilder shadowBuilder = new View.DragShadowBuilder(v);
       v.startDrag( data, //data to be dragged
            shadowBuilder, //drag shadow
            v, //local data about the drag and drop operation
           0 //no needed flags
       );
       v.setVisibility(View.VISIBLE);
     }
    else if (v == img2)
```

```
{
       clicked="";
       clicked = "img2";
       ClipData.Item item = new ClipData.Item((CharSequence)v.getTag());
       String[] mimeTypes = { ClipDescription.MIMETYPE_TEXT_PLAIN };
       ClipData data = new ClipData(v.getTag().toString(), mimeTypes, item);
       View.DragShadowBuilder shadowBuilder = new View.DragShadowBuilder(v);
       v.startDrag( data, //data to be dragged
            shadowBuilder, //drag shadow
            v, //local data about the drag and drop operation
            0 //no needed flags
       );
       v.setVisibility(View.VISIBLE);
     }
    return true;
  }
  static void startTimer() {
              Log.e("starttimer", "starttimer");
//
    mTimer1 = new Timer(true);
    mTt1 = new TimerTask() {
       public void run() {
         mTimerHandler.post(new Runnable() {
            public void run() {
//
                                           Log.e("show", "show");
//
                     Log.e("HERE", "inthreads");
              if (x.equals("one"))
              {
                x= "";
                 x="two";
                 Resources res = conext.getResources(); //resource handle
                 Drawable drawable = res.getDrawable(R.drawable.ffftwo);
                 imge.setBackground(drawable);
              }
              else
              {
                x= "";
                 x="one";
                 Resources res = conext.getResources(); //resource handle
                 Drawable drawable = res.getDrawable(R.drawable.fffone);
                 imge.setBackground(drawable);
              }
              startTimer();
```

}

```
});
       }
     };
    try
     {
       mTimer1.schedule(mTt1, 300);
     }
    catch(Exception e)
     ł
       stopTimer();
     }
  }
  protected static void stopTimer() {
    if (mTimer1 != null) {
//
                      Log.e("stoptimer", "stoptimer");
       mTimer1.cancel();
       Resources res = conext.getResources(); //resource handle
       Drawable drawable = res.getDrawable(R.drawable.ffftwo);
       imge.setBackground(drawable);
       mTimer1.purge();
     }
  }
  @Override
  protected void onStop() {
    super.onStop();
//
       t1.shutdown();
  }
  private static void speak (final String f, final String s, final String t)
  {
    t1 = new TextToSpeech(con, new TextToSpeech.OnInitListener() {
       @Override
       public void onInit(int status) {
         if(status != TextToSpeech.ERROR) {
            t1.setPitch(3.4f); // saw from internet
            t1.setSpeechRate(0.6f);
            t1.setLanguage(Locale.UK);
            String toSpeak = "bring the "+f+" to the match picture";
            t1.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
            speak2(s, t);
          }
```

```
}
```

```
});
}
private static void speak2 (final String f , final String s )
{
```

```
t2 = new TextToSpeech(con, new TextToSpeech.OnInitListener() {
    @Override
    public void onInit(int status) {
        if(status != TextToSpeech.ERROR) {
            t2.setPitch(3.4f); // saw from internet
            t2.setSpeechRate(0.6f);
            t2.setLanguage(Locale.UK);
            String toSpeak = "bring the "+f+" to the match picture";
            t2.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
        }
    }
}
```

APPENDIX C BRING FINAL 2

package com.example.colors_learn;

import android.app.Activity; import android.content.ClipData; import android.content.ClipDescription; import android.content.Context; import android.content.Intent; import android.content.res.Resources; import android.graphics.drawable.Drawable; import android.os.Handler; import android.os.PowerManager; import android.speech.tts.TextToSpeech; import android.support.v7.app.ActionBarActivity; import android.os.Bundle; import android.util.Log; import android.view.DragEvent; import android.view.View; import android.view.ViewGroup; import android.view.Window; import android.widget.ImageView; import android.widget.LinearLayout; import android.widget.TextView; import android.widget.Toast;

import java.util.ArrayList; import java.util.Locale; import java.util.Random; import java.util.Timer; import java.util.TimerTask;

public class BringFinal2 extends Activity implements View.OnDragListener, View.OnLongClickListener { protected PowerManager.WakeLock mWakeLock: private ImageView img1, img2, img3, img4; private TextView tv1, tv2; private static int[] cimg; private static int[] cimg2; private static String[] fullname; private static String[] name; private static int[] num; int num1=0, num2=0; Random random = new Random(): int min=0, max =0; private ArrayList<Integer> arraylist; private LinearLayout right, left; private static final String image1 = "num1";

```
private static final String image2 = "num2";
  private String clicked="";
  SoundClass sou:
  static TextToSpeech t1;
  static TextToSpeech t2;
  static Context con;
  private Boolean one=false, two=false;
  private static LinearLayout imge;
  private static String x = "one";
  public static Timer mTimer1;
  public static Handler mTimerHandler = new Handler();
  public static TimerTask mTt1;
  static Context conext;
  int tr=0,fa=0;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     getWindow().requestFeature(Window.FEATURE_ACTION_BAR);
     getActionBar().hide();
     setContentView(R.layout.activity_bring_final2);
     final PowerManager pm = (PowerManager)
getSystemService(Context.POWER SERVICE);
     this.mWakeLock = pm.newWakeLock(PowerManager.SCREEN_DIM_WAKE_LOCK,
"My Tag");
     this.mWakeLock.acquire();
     Intent intent = getIntent();
     tr = intent.getIntExtra("true", 0);
     fa = intent.getIntExtra("false", 0);
     imge = (LinearLayout) findViewById(R.id.main);
     conext = this:
     startTimer();
     \operatorname{cimg} = \operatorname{new}
int[]{R.drawable.dog,R.drawable.car,R.drawable.pink_box,R.drawable.duck,R.drawable.bus,
R.drawable.plane};
     \operatorname{cimg} 2 = \operatorname{new}
int[]{R.drawable.meal,R.drawable.road,R.drawable.pink bring,R.drawable.qmh,R.drawable.r
oad,R.drawable.sky};
     name = new String[]{"B L U E","B R O W N", "P I N K","R E D","Y E L L O W","W
HITE''
    fullname = new String[]{"dog","car","Pink","duck","bus","plane"};
     con = this:
     speak(fullname[2], fullname[3], "");
     sou = new SoundClass(BringFinal2.this);
     img1 = (ImageView) findViewById(R.id.imageView1);
```

```
img2 = (ImageView) findViewById(R.id.imageView2);
```

```
img3 = (ImageView) findViewById(R.id.imageView3);
img4 = (ImageView) findViewById(R.id.imageView4);
```

```
right = (LinearLayout) findViewById(R.id.t1);
left = (LinearLayout) findViewById(R.id.t2);
```

```
right.setOnDragListener(this);
left.setOnDragListener(this);
```

```
img1.setImageResource(cimg[2]);
img2.setImageResource(cimg[3]);
```

```
img3.setImageResource(cimg2[2]);
img4.setImageResource(cimg2[3]);
```

```
img1.setTag(image1);
img2.setTag(image2);
```

{

```
img1.setOnLongClickListener(this);
img2.setOnLongClickListener(this);
}
```

```
@Override
public boolean onDrag(View v, DragEvent event) {
  Drawable normalShape = getResources().getDrawable(R.drawable.normal_shape);
  Drawable targetShape = getResources().getDrawable(R.drawable.target_shape);
  Log.e("CLICKED", clicked);
  switch (event.getAction()) {
    case DragEvent.ACTION_DRAG_STARTED:
      break;
    case DragEvent.ACTION_DRAG_ENTERED:
      v.setBackground(targetShape);
                                      //change the shape of the view
      break:
    case DragEvent.ACTION_DRAG_EXITED:
      v.setBackground(null);
      break:
    case DragEvent.ACTION_DROP:
      if(v == findViewById(R.id.t1)) {
         if (clicked.equals("img2"))
         {
           one = true:
           if (one)
           {
             if (two)
```

```
Intent intent = new Intent(this, GoToTestFinal2.class);
                   intent.putExtra("false", fa);
                   intent.putExtra("true", tr);
                   onDestroy();
                   stopTimer();
                   startActivity(intent);
                   finish();
                 }
              }
              View view = (View) event.getLocalState();
              ViewGroup viewgroup = (ViewGroup) view.getParent();
              viewgroup.removeView(view);
              LinearLayout.LayoutParams layoutParams = new
LinearLayout.LayoutParams(50, 50);
              view.setLayoutParams(layoutParams);
              Log.e("T1", "here t1 Dropped");
              LinearLayout containView = (LinearLayout) v;
              containView.addView(view);
              view.setVisibility(View.VISIBLE);
              LinearLayout left = (LinearLayout) findViewById(R.id.left);
              left.setWeightSum(2);
              sou.playSound(R.raw.right crowd);
              tr+=1;
            }
            else
            {
              sou.playSound(R.raw.wrong_crowd);
              Toast.makeText(getApplicationContext(), "Wrong, Try Again !",
Toast.LENGTH_LONG).show();
              fa += 1;
            }
          }
         else if(v == findViewById(R.id.t2)) {
            if (clicked.equals("img1"))
            {
              two = true;
              if (one)
              {
                 if (two)
                 {
                   Intent intent = new Intent(this, GoToTestFinal2.class);
                   intent.putExtra("false", fa);
                   intent.putExtra("true", tr);
                   onDestroy();
                   stopTimer();
                   startActivity(intent);
                   finish();
```

```
}
              }
              View view = (View) event.getLocalState();
              ViewGroup viewgroup = (ViewGroup) view.getParent();
              viewgroup.removeView(view);
              LinearLayout.LayoutParams layoutParams = new
LinearLayout.LayoutParams(50, 50);
              view.setLayoutParams(layoutParams);
              Log.e("T2", "here t2 Dropped");
              LinearLayout containView = (LinearLayout) v;
              containView.addView(view);
              view.setVisibility(View.VISIBLE);
              LinearLayout left = (LinearLayout) findViewById(R.id.left);
             left.setWeightSum(2);
              sou.playSound(R.raw.right_crowd);
             tr+=1;
            }
           else
            {
              sou.playSound(R.raw.wrong_crowd);
             Toast.makeText(getApplicationContext(), "Wrong, Try Again !",
Toast.LENGTH_LONG).show();
             fa += 1;
            }
         }
         break;
       case DragEvent.ACTION_DRAG_ENDED:
         v.setBackground(null); //go back to normal shape
       default:
         break;
    }
    return true;
  }
  @Override
  public boolean onLongClick(View v) {
    if (v == img1)
     {
       clicked="":
       clicked="img1";
       ClipData.Item item = new ClipData.Item((CharSequence)v.getTag());
       String[] mimeTypes = { ClipDescription.MIMETYPE_TEXT_PLAIN };
       ClipData data = new ClipData(v.getTag().toString(), mimeTypes, item);
       View.DragShadowBuilder shadowBuilder = new View.DragShadowBuilder(v);
       v.startDrag( data, //data to be dragged
```

```
shadowBuilder, //drag shadow
```

```
v, //local data about the drag and drop operation
            0 //no needed flags
       );
       v.setVisibility(View.VISIBLE);
     }
    else if (v == img2)
     {
       clicked="":
       clicked = "img2";
       ClipData.Item item = new ClipData.Item((CharSequence)v.getTag());
       String[] mimeTypes = { ClipDescription.MIMETYPE_TEXT_PLAIN };
       ClipData data = new ClipData(v.getTag().toString(), mimeTypes, item);
       View.DragShadowBuilder shadowBuilder = new View.DragShadowBuilder(v);
       v.startDrag( data, //data to be dragged
            shadowBuilder, //drag shadow
            v, //local data about the drag and drop operation
            0 //no needed flags
       );
       v.setVisibility(View.VISIBLE);
     }
    return true;
  }
  static void startTimer() {
//
              Log.e("starttimer", "starttimer");
    mTimer1 = new Timer(true);
    mTt1 = new TimerTask() {
       public void run() {
         mTimerHandler.post(new Runnable() {
            public void run() {
//
                                           Log.e("show", "show");
                     Log.e("HERE", "inthreads");
//
              if (x.equals("one"))
              {
                 x= "";
                 x="two";
                 Resources res = conext.getResources(); //resource handle
                 Drawable drawable = res.getDrawable(R.drawable.ffftwo);
                 imge.setBackground(drawable);
              }
              else
              {
                 x= "";
                 x="one";
                 Resources res = conext.getResources(); //resource handle
                 Drawable drawable = res.getDrawable(R.drawable.fffone);
```

```
imge.setBackground(drawable);
               }
               startTimer();
            }
          });
       }
     };
    try
     {
       mTimer1.schedule(mTt1, 300);
     }
     catch(Exception e)
     {
       stopTimer();
     }
  }
  protected static void stopTimer() {
    if (mTimer1 != null) {
//
                      Log.e("stoptimer", "stoptimer");
       mTimer1.cancel();
       Resources res = conext.getResources(); //resource handle
       Drawable drawable = res.getDrawable(R.drawable.ffftwo);
       imge.setBackground(drawable);
       mTimer1.purge();
    }
  }
  @Override
  protected void onStop() {
     super.onStop();
    t1.shutdown();
  }
  private static void speak (final String f, final String s, final String t)
  {
    t1 = new TextToSpeech(con, new TextToSpeech.OnInitListener() {
       @Override
       public void onInit(int status) {
          if(status != TextToSpeech.ERROR) {
            t1.setPitch(3.4f); // saw from internet
            t1.setSpeechRate(0.6f);
            t1.setLanguage(Locale.UK);
```

```
String toSpeak = "bring the "+f+" color to the "+f+" picture";
         t1.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
         speak2(s, t);
       }
     }
  });
}
private static void speak2 (final String f, final String s)
{
  t2 = new TextToSpeech(con, new TextToSpeech.OnInitListener() {
     @Override
     public void onInit(int status) {
       if(status != TextToSpeech.ERROR) {
         t2.setPitch(3.4f); // saw from internet
         t2.setSpeechRate(0.6f);
         t2.setLanguage(Locale.UK);
         String toSpeak = "bring the "+f+" color to the "+f+" picture";
         t2.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
       }
     }
  });
}
```

}

APPENDIX D FINAL ACTIVITY

package com.example.colors_learn;

import android.app.Activity; import android.content.Context; import android.content.Intent; import android.content.res.Resources; import android.graphics.drawable.Drawable; import android.os.Handler; import android.os.PowerManager; import android.speech.tts.TextToSpeech; import android.support.v7.app.ActionBarActivity; import android.support.v7.app.ActionBarActivity; import android.view.View; import android.view.Window; import android.widget.Button; import android.widget.RelativeLayout; import android.widget.TextView;

import org.w3c.dom.Text;

import java.util.Locale; import java.util.Timer; import java.util.TimerTask;

public class FinalActivity extends Activity {

private Button tryagainbtn , conbtn ; public static Timer mTimer2; public static Handler mTimerHandler2 = new Handler(); public static TimerTask mTt2; static TextToSpeech t1,t2; private static RelativeLayout imge; private static String x = "one"; static Context context; private TextView trtx,fatx; protected PowerManager.WakeLock mWakeLock; SoundClass sou; int tr=0,fa=0;

@Override
protected void onCreate(Bundle savedInstanceState) {
 super.onCreate(savedInstanceState);
 getWindow().requestFeature(Window.FEATURE_ACTION_BAR);
 getActionBar().hide();
 setContentView(R.layout.activity_final);

```
final PowerManager pm = (PowerManager)
getSystemService(Context.POWER_SERVICE);
    this.mWakeLock = pm.newWakeLock(PowerManager.SCREEN_DIM_WAKE_LOCK,
"My Tag");
    this.mWakeLock.acquire();
    imge = (RelativeLayout) findViewById(R.id.main);
    context = this;
    tryagainbtn = (Button) findViewById(R.id.button);
    conbtn = (Button) findViewById(R.id.button2);
     Intent intent = getIntent();
    tr = intent.getIntExtra("true", 0);
    fa = intent.getIntExtra("false", 0);
    trtx = (TextView) findViewById(R.id.textView6);
    fatx = (TextView) findViewById(R.id.textView5);
    fatx.setText("Wrong Count = "+fa+"");
    trtx.setText("True Count = "+tr+"");
    sou = new SoundClass(FinalActivity.this);
    sou.playSound(R.raw.right_crowd);
    tryagainbtn.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View v) {
         Intent intent = new Intent(getApplicationContext(),Welcome_Activity.class);
         startActivity(intent);
       }
     });
    conbtn.setOnClickListener(new View.OnClickListener() {
       @Override
       public void onClick(View v) {
         Intent intent = new
Intent(getApplicationContext(),WelcomeTranportation_Activity.class);
         startActivity(intent);
       }
     });
    speak2();
    startTimer2();
  }
  static void startTimer2() {
    mTimer2 = new Timer(true);
    mTt2 = new TimerTask() {
       public void run() {
         mTimerHandler2.post(new Runnable() {
            public void run() {
              if (x.equals("one"))
              {
```

```
x= "";
                 x="two";
                 Resources res = context.getResources(); //resource handle
                 Drawable drawable = res.getDrawable(R.drawable.fffone);
                 imge.setBackground(drawable);
               }
              else
               {
                 x= "";
                 x="one";
                 Resources res = context.getResources(); //resource handle
                 Drawable drawable = res.getDrawable(R.drawable.ffftwo);
                 imge.setBackground(drawable);
               }
               startTimer2();
            }
          });
       }
     };
//
              try
//
     mTimer2.schedule(mTt2, 400);
//
               }
              catch(Exception e)
//
//
               {
//
                      Log.e("ERROR", e+"");
////
                      stopTimer();
//
               }
  }
  protected static void stopTimer2() {
    if (mTimer2 != null) {
       Resources res = context.getResources(); //resource handle
       Drawable drawable = res.getDrawable(R.drawable.fffone);
       imge.setBackground(drawable);
       mTimer2.cancel();
       mTimer2.purge();
     }
  }
  private static void speak2 ()
  {
```

t2 = new TextToSpeech(context, new TextToSpeech.OnInitListener() {

```
@Override
public void onInit(int status) {
    if(status != TextToSpeech.ERROR) {
        t2.setPitch(3.4f); // saw from internet
        t2.setSpeechRate(0.6f);
        t2.setLanguage(Locale.UK);
        String toSpeak = " if you want to try again press try again button";
        t2.speak(toSpeak, TextToSpeech.QUEUE_FLUSH, null);
     }
    }
}
```