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INTEGRATING MOBILE PHONES TO ENHANCE STUDENTS' VOCABULARY RETENTION IN EFL CLASSROOM

MASTER THESIS

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Approval of the Graduate School of Educational Sciences

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I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Arts.

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DECLARATION

I hereby declare that all information in this work is entirely my work with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all materials and results that are not original to this study.

Signature:

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ABSTRACT

INTEGRATING MOBILE PHONES TO ENHANCE STUDENTS' VOCABULARY RETENTION IN EFL CLASSROOM

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The purpose of this study is to investigate the effectiveness of vocabulary retention via mobile phones technology. Owing to the nature of the subject, the methodology of the present study was experimental research. Learners from two identical classes at a Libyan university were selected to form two groups: SMS & VRS group, (the experimental group) (N=20) and the paper group (the control group) (N=20). The instruments were pre-and two post vocabulary tests, two questionnaires and an interview. Both groups were administered a pre-test to classify the level of their previous vocabulary knowledge.

The findings showed that there was no considerable heterogeneity ($p>.05$) between the experimental group and the paper group. The first questionnaire was used to measure the difference in perceptual modality between both groups and the other was used to explore the experimental group students' attitudes towards using VRS. The findings of the two post-tests showed that the experimental group outperformed the control group in both phases: SMS phase and VRS phase. Nevertheless, both groups had developed in the two post-tests despite the medium of learning. The results of the PMPS questionnaire also illustrated no remarkable difference between the two groups in terms of their learning style. In addition, the findings of the

second questionnaire and the interview showed that the students had positive attitudes towards using VRS as a tool of learning and retaining vocabulary. However, because of the superiority of VRS on the SMS and the other mean of vocabulary retention, it is recommended that this software have to be used to enhance students' retention ability.

Keywords: mobile phone, vocabulary retention, mobile learning, language learning

ÖZET

EFL SINIFINDAKİ ÖĞRENCİLERİN Kelime Haznesinin GELİŞTİRİLMESİ İÇİN CEP TELEFONLARININ ENTEGRE EDİLMESİ

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Bu çalışmanın amacı, cep telefonu teknolojisi vasıtasıyla kelime hazinesinin etkinliğini araştırmaktır. Konunun doğası gereği, bu bir deneysel çalışma araştırmadır. SMS ve VRS grubu (deney grubu) (N = 20) ve kağıt grubu (kontrol grubu) (N = 20), bir Libya üniversitesindeki iki aynı sınıftan öğrenciler seçildi.

Aletler pre ve two post kelime test, iki anket ve bir röportajdı. Her iki gruba daha önceki kelime bilgisi düzeylerini sınıflandırmak için bir ön test verildi. Bulgular, deney grubu ile kağıt grubu arasında önemli bir heterojenite olmadığını (p> .05) göstermektedir. İlk anket, her iki grup arasındaki algılama modalitesindeki farkı ölçmek için kullanıldı ve diğeri ise deney grubundaki öğrencilerin VRS kullanımına yönelik tutumlarını keşfetmek için kullanıldı. İki post-testin bulguları deney grubunun her iki aşamada kontrol grubundan daha iyi olduğunu gösterdi: SMS asama ve VRS asama. Bununla birlikte, her iki grup da öğrenme ortamına rağmen iki test sonrası gelişti. PMPS anketinin sonuçları da iki grup arasında öğrenme stili bakımından belirgin bir farklılık göstermedi. Buna ek olarak, ikinci anketin bulguları ve veri toplamak için kullanilan Dokümanlar röportaj, öğrencilerin VRS'yi kelime öğrenme ve koruma aracı olarak kullanmaya yönelik olumlu tutumlara sahip olduklarını gösterdi. Bununla birlikte, VRS'nin

SMS'deki üstünlüğü ve diğer kelime dağarcığı ortalamasından dolayı, bu yazılımın öğrencilerin alıkoyma yeteneklerini arttırmak için kullanılması önerilir.

***Anahtar Kelimeler*:** cep telefonu, kelime hazinesi, mobil öğrenme, dil öğrenimi

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LIST OF ABBREVIATIONS

AITLAS: Artificial Intelligent Techniques for Linguistic Applications

CG: Control Group

EFL: English Foreign Language

EG: Experimental Group

ELT: English Language Teaching

GSL: General List Service

ICT: Information & Communication Technology

IOS: iPhone Operating System

KET: Key English Test

LMS: Long Message Service

M: Mean Score

MALL: Mobile Assisted Language Learning

MaPPs: Motivating Active Participation of Primary Schoolchildren

MMS: Multimedia Messaging Service

PARC: Palo Alto Research Centre

PDA: Personal Digital Assistant

PMPS: Perceptual Modality Preference Survey

PPCGD: Pretest-Posttest Control Group Design

SD: Standard Deviation

SMS: Short Message Service

SPSS: Statistical Package for Social Science

TYV: Test Your Vocabulary

VRS: Vocabulary Retention Software

CHAPTER I

INTRODUCTION

Overview

During Libya's period of international isolation from 1998 to 2008, the teaching of French and English was outlawed under a Gaddafi-obliged strategy to 'eliminate foreign impact'. This indicates that there is an inadequate foundation for teaching languages in Libya and consequently a strong need to reinforce domestic foreign-language learning. Black (2007) affirmed that, this caused a major dent in the level of English language learning amidst the population of the country. As a consequence from that, English foreign language (EFL) learners in Libya now confront the obstacle of lacking exposure to English. For the majority of them, the English class is the sole period of time to practice English. Therefore, vocabulary enhancement and learning the different aspects of English are usually the liability of the learners outside the classroom due to the limitation of class time.

As a matter of fact, the Libyan gas and oil manufacturing has operated a dominant role in the economic improvement of the country. While there is no opposing the fact that the oil production is the main source of income in the Libyan earnings, one conclusion has been affirmed that the petroleum sector has remained comparatively underdeveloped (BBC, 2010). In this respect, the advantages which the knowledge of the English language can employ are of superior relevance.

The international impact of English, in the Libyan context, was initially sensed frequently by the demand to open up to the Western world for technical improvement and global interaction, chiefly via expanding communication with the United States. The Libyan-USA

relationships continued to observe affirmative development in political and economic spheres (Omar, 2014). After the breakdown of Gaddafi's regime and the establishment of the free Libya Republic 2011, people's need to modernize and keep solid relations with the west assisted extremely the foreign language teaching policy, thereby increasing the expansion of English Language Teaching (ELT) in the country.

Yet, with the advancement of modern technology, there is critical need for teachers to use learner-centred education in which the student will have a big opportunity to learn every time and in all the places rather than the course books, teachers and classroom-based materials (traditional teaching). For the fulfilment of that purpose, there is a crucial demand to grant materials and facilities beside with the standard or traditional techniques for autonomous, long-term, lifetime and productive learning (Reinders, 2010). Progressions in the portable wireless devices for the experts of education give them the ability to design new teaching approaches by adopting wireless communication technologies, in all places and all the time.

Trend via the utilization of pedagogical media with the possibility of further transportation, which is used in personal training makes learning more interesting for the students (Caudill, 2007). The improvements of mobile technologies have revolutionized the system, learning and teaching methods which are being performed inevitably (Cavus, 2011). The implementation of mobile technologies for education probably is facilitated through the enterprise of learners' creation, sharing and addressing the notions of mobile technologies to fit the association between the difference of informal and formal education literature. These technologies are aiming to create an innovative community of learners (Comas Quinnet, Mardomingo, & Valentine, 2009). The attempt of the professionals to mobile learning is to

connect the consequences of educational and technical research in this model of learning to one another.

Therefore, with the advancement of mobile technologies, learning via mobile phones has become the most effective assistant in education. This new kind of electronic device is considered as a revolution (innovative) in educational technologies (Peng, Chien-Choua & Chin-Chung, 2009). Apparently, the most famous handheld wireless devices are smart phones. The latest smart phones give their users the capability to get and manage information through downloading software applications, which can be normally found on IOS store or Android store depending on the brand of the smart phone. The Multimedia Message Service (MMS) and Short Message Service (SMS) are amongst the potential and abilities of smart phones for educational assistance. Smart phones can be attached to a laptop or a computer and through this the data can be inserted into the smartphones via the computer (Zamani, Kheirollahi & Hosseinkhani, 2012).

The benefits of smart phones are not restricted only to the prominent entrance to educational services. They can make alterations in learning techniques in order to obtain productive learning results. In this regard, smart phones can perform a reinforcing role for the students. In much of learning in everyday life, there is much practice, which may take place outside the classroom, particularly, on streets, workplaces, homes and other different places. Smart phones can be employed in these situations to facilitate learner-centred learning. Learning will take place by the student and the students are capable of recognizing, managing and finding the existed knowledge, accomplishing and assessing new data (Zamani et al., 2012).

Correspondingly, vocabulary retention is crucially important for second or foreign language learners. Mobile phones can be remarkably fused in the EFL classroom to reinforce learning and make the vocabulary learning process more motivating and interesting than the

classical way of learning vocabulary items. Significantly, As Wilkins (1972) echoed “without grammar very little can be conveyed, without vocabulary nothing at all can be conveyed” (p. 111). Harmer (1994) also stated that, “If language structures make up the skeleton of language, then it is vocabulary that provides the vital organs and the flesh” (p. 153).

Learning vocabulary is the key start to master a foreign language. It has shifted a phenomenon that vocabulary’s software application or book can readily be one of the blockbusters in the Libyan market since about every learner has a copy of a vocabulary book and they regularly utilize significant time every day on English vocabulary learning during their four academic years in university and ahead, in the goal that they can accelerate the pace of their vocabulary expansion.

Teachers may consider mobile phones as a constructive tool rather than a destructive one. Likewise, they may introduce a set of practical techniques of integrating mobile phones in EFL classrooms which were highlighted in the previous studies conducted by (Begem, 2011; Lu, 2008), for instance, using free programs to make flashcards as software for mobile phones. Therefore, there are distinct companies that produce flashcard software that work on mobile phones. Learners can create vocabulary flashcards that can be saved, shared, and practiced anywhere and everywhere. Another technique would be the use of the text messaging feature to enhance vocabulary learning. A study carried out by Thornton and Houser (as cited in Rienders, 2010) shows that Short Message Service (SMS) text messages can be used to send out vocabulary items at regular intervals, which increases the student vocabulary retention.

Statement of the Problem

As a matter of fact, students learn vocabulary, but they forget the vocabulary easily. Hedge (2008) asserted that:

> despite the traditional neglect, recent years have seen a greater awareness of the questions which need to be addressed with regard to vocabulary learning by researchers, materials designers, and teachers. An agenda of issues might well contain the following: What strategies do learners use to acquire new words or to retain them? (para. 6.)

Learning the English language has become a vital aim for adults in the Middle East countries, including Libya. The reason behind this is the people's desire to follow up to date technological shifts and expand their knowledge about the western world. Whereas some institutes have tried to involve technology in the country to reinforce adult English language learning, many EFL learners are not able to reach and utilize sophisticated technological devices like smart phones, smartboards or virtual learning outside or inside the classroom. A well-planned implementation of technology in the EFL classroom ease the acquisition of the cultural knowledge required to communicate effectively in the target language (Vanderplank, 2010).Therefore, it would be helpful for English language teachers and researchers to investigate the potential of mobile technologies at hand to assist teaching methods and promote the language learning experience.

Mobile phones are the most popular mobile appliances in mobile learning research because of their publicity among the learner population (Cavus & Ibrahim, 2009; Cui & Wang, 2008; Traxler & Kukulska-Hulme, 2009). Despite the fact that mobile phones' design was not basically planned for educational objectives, recent features in the newest models have helped to

integrate these devices into educational activities (Cheung & Hew, 2009; Kukulska-Hulme, 2012; Burston, 2014).

Regardless of the popular concern in examining the usage of mobile devices for pedagogical aims over various areas of education, the literature review affirmed that most current studies were conducted in Europe, Asia, and North America (Cheung & Hew, 2009). In the scope of foreign language teaching, findings are from investigations made in the countries of South and East of Asia (e.g., Philippines, Bangladesh, South Korea, Japan, and China; Burston, 2014). In the Middle East, studies on mobile learning, in foreign language fundamentally, have been restricted with the exception of some research conducted in Saudi Arabia, Turkey, and Iran (Khrisat & Mahmoud, 2013; Basoglu & Akdemir, 2010; Ketabi & Khazaie, 2011).

Mobile phones represent possible instructional media for Libyan EFL learners, particularly for those adolescent students who have inadequate access to more developed technologies in the classroom, so a study on this topic is worth conducting. To put it another way, it is crucial to explore how mobile phones can be used to examine whether they can improve learners' ability to retain words or not.

Aim of the Study

The purpose of this study was to investigate the effectiveness of the integration of mobile phones via vocabulary retention software or by sending SMS can increase the ability of retention between the learners. The study also investigated whether perceptual modality can have a dominant effect on learners' strategies of retaining new words inside or outside the classroom.

The main objective of the study was to shed light on how the involvement of mobile phones as vocabulary mobile software or through sending short message service (SMS) to

learners in regular intervals can provide a better strategy for learning vocabulary than the traditional ways. Learners' traditional way of retaining vocabulary involves, writing down all the words they encountered and link them via mind maps or translate them into Arabic for the aim of adding these words in their long-term memory. With such a fast progression in technology, today's generation of adult students, regardless of their socioeconomic status, are more exposed to more sophisticated mobile devices. Being up-to-date with educational methods to more sophisticated mobile technologies can be an obstacle for EFL educators who do not improve their technological skills in order to generate innovative opportunities to integrate mobile phones and other mobile devices to address the learners' requirements. Accordingly, this thesis also aimed to help EFL teachers to integrate mobile phones in their classes mainly through the use of vocabulary mobile software structured by the researcher that can develop the students' ability to retain new vocabulary in an interesting way. Furthermore, the study aimed to examine the following questions:

1. Does the intervention of mobile phone SMS technique in EFL classroom help elementary EFL learners to recall vocabulary items better?

2. Does VRS software employed in EFL classroom help elementary EFL learners to improve and recall vocabulary items better?

3. Do elementary EFL learners' perceptual modalities significantly affect the way they retain vocabulary with respect to different techniques using the mobile phone?

4. What are the EG opinions regarding the use of mobile technology (VRS) to improve and retain vocabulary?

Significance of the study

This study may potentially provide valuable insights into revealing the possible effects of using mobile phone SMS techniques as well as a mobile software technique on university students. This study is of great significance for six reasons:

1. The information derived from the study may raise a broader yielded pedagogical involvement of mobile technologies in all aspects of language learning in EFL, i.e. it can give us a profitable opportunity to apply this technology to develop a reliable curriculum for the four language skills.

2. The positive offshoot will benefit programmers to design technology-based language software based on the needs of language learners.

3. The study will clarify how perceptual modality can have an effect on learners' vocabulary retention.

4. The findings of this research will be advantageous for the administrators in adapting the mobile teaching and learning processes to draw students' attention.

5. The results will be useful for any teacher interested in making use of mobile phones in enhancing learners' language proficiency as well as learners who will be shown the best way for vocabulary retention.

6. The conclusion of this research may conceivably contribute insights into unfolding how learners master a foreign language, that is, whether learning is taking place by combining or blending a mobile technology into the learning process.

Definition of Terms

Cell phone: an inexpensive cell phone that includes primary features such as short message service (SMS), camera, Bluetooth, video recording, voice messaging sometimes Internet access for instant messaging, and browsing.

MALL: mobile-assisted language learning, or language learning facilitated by the mobility of the student and/or portability of mobile devices.

Mobile devices: movable electronic technologies tiny enough to suit in a purse or a pocket, and can be taken and used everywhere and anytime.

Mobile learning: learning with the help of little transportable electronic appliances (cell phones) acceptable to the student when required

Smartphone: a Mobile device that merges the features of cell phones (more expensive than the regular cell phone) and portable digital assistants (PDAs), including a bigger memory for images, files and videos, and high-speed Internet connection.

Perceptual modality: the method of retaining vocabulary through the use of their five senses. The seven perceptual modes (pathways) included in this theory are print, aural, interactive, visual, haptic, kinaesthetic, and olfactory.

E-learning: learning through the use of Laptops, Projectors, mobile phones, IPad, SMART board and the Internet etc.

VRS: is software designed by the researcher. This software has the ability to help learners to retain vocabulary by dividing the difficult task of memorization into mini-tasks.

Limitation of the Study

Though this study was thoroughly prepared, the researcher is conscious of its imperfections and weaknesses. First of all, the study was carried over ten weeks which is not adequate for the researcher to examine whether the learners' vocabulary improved in a significant way or not. It would have been much better if it was carried in a longer period. Moreover, this study is limited to first year students studying at Omar AL-Mukhtar University in Libya. It is also limited in terms of the number of the participants, as only 40 students participated in this study. Another limitation of the current study is the location and geographical area. The data is obtained from only one city in Libya.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Due to the precipitous technological evolution, innovative approaches in English as a foreign language have been equipping students with more real-world and authentic opportunities for autonomous language learning. Despite the fact that certain technological devices, such as projectors, DVDs, and audio books, have been integrated into the Libyan EFL classroom; a gap still exists in the access to sophisticated technological devices such as smart boards and mobile learning technology. Hence, integrating mobile devices, such as smartphones into educational activities can constitute a potential solution to solve this problem.

This section reviewed research studies about the integration of mobile devices in language learning and teaching, with a close focus on smartphones. The objective of this review was to present some effective solutions on how to bridge the technological gap that exists in the Libyan EFL classroom with the help of smartphones. After explaining what is meant by mobile learning, brief overviews of the various definitions given to this term are mentioned. The next section presents the commencement of Mobile Assisted Language Learning MALL in learning new languages. The next part addresses the effect of mobile devices in language learning. The final section presents several research studies on the use of mobile phones for Mobile Assisted Language Learning.

What is Mobile Learning?

Mobile Assisted Language Learning (MALL) illustrates an approach to language learning that is reinforced via the employment of mobile devices. MALL is associated with the adoption of mobile technologies, like smartphones, PDAs, MP3 /MP4 players, and audio books, to enhance students' language learning. With MALL learners are capable of obtaining language learning materials, and interact with their peers and instructors, at anytime and anywhere (Kukulska-Hulme, 2006). MALL presently helps to implement the use and retention of newly acquired language input such as new vocabulary for EFL learners to learn a foreign language in convenient manner. By the same token, these devices can provide learning spaces that are: contextual, portable, informal, personal, pervasive, ubiquitous, and spontaneous (Kukulska-Hulme, Norris & Donohue, 2015). Therefore, as Pilling-Cormick and Garrison (2007) demonstrated, students assume initial control and charge of their learning process, involving evaluating outcomes and setting goals. They are no longer the passive listeners of education, but active learners and choice makers in the learning market.

Mobile learning has been the topic to various definitions because of the fast improvement of the area and the several meanings behind the word "mobile" (Ferreira, Klien, Freitas, & Schlemmer, 2013; Sharples, Taylor, & Vavoula, 2007; Traxler, 2007, 2011). Mobile learning was originally described as a sub-set of e-learning (Caudill, 2007; Chinnery, 2006; Quinn, 2000). First projects on mobile learning started with trials and pilot studies modifying current e-learning instruction to mobile devices (Kukulska-Hulme & Traxler, 2005; Trifonova & Ronchetti, 2003). Mobile devices are tiny electronic technologies that people can take with them at any time, any place, and cover all kinds of mobile phones, PDAs, dictionaries, eBook readers, mp3 player and iPods (Chinnery, 2006; Corbeil & Valdes-Corbeil, 2007; Cui & Wang, 2008; Stockwell, 2010).

Some researchers in the scope claimed that mobile learning is more than plain e-learning on mobile devices, and signify a distinct kind of learning modality (Pachler, Bachmair & Cook, 2010; Traxler, 2009; Winters, 2007). In this light, Traxler (2007) clarified:

> Some advocates of mobile learning attempt to define and conceptualize it in terms of devices and technologies; other advocates define and conceptualize it in terms of the mobility of learners and the mobility of learning, and in terms of the learners' experience of learning with mobile devices. (p. 10)

Mobile learning is likewise described as learning mediated by the aid of tiny transportable devices accessible most of the time and that can be suitable for the students' immediate setting (Kukulska-Hulme & Traxler, 2005). Keegan (2005) stated that mobile learning should concentrate on the movability of the device, and he described it as learning on electronic devices tiny enough to suit in a wallet or a pocket. As the literature offers a multiple of definitions for mobile learning, the term, as utilized in this thesis study, will be delimited by the definition as "mobile learning is, the provision of education and training on PDAs/palmtops/handhelds, smartphones, and mobile phones" (Traxlor, 2005, p.2). Therefore, the researcher will define mobile learning as learning with the help of tiny transportable electronic devices (smartphones) accessible to the student when required. In like manner, Klopfer, Squire & Jenkins (2002) claimed five properties of mobile devices which can produce educational benefits and make mobile devices preferred by everyone, those are: Portability that learners will be able to carry their mobile phones wherever they go. Social interactivity demonstrates that all the learners will be able to share knowledge through blogs and social media for instance. Context sensitivity that the information derived from these mobile devices can be reliable if it is controlled by the teacher. Connectivity and individuality indicates that every

learner can learn in his own pace and learners are able to connect their mobile phones with the classmates through a network.

The Onset of MALL Studies

MALL studies began in the 1980s, when Xerox Palo Alto Research Center (PARC) revealed the Dynabook, a device very identical to what is now known as a tablet. In the 90s, it proceeded to improve in universities in Asia and Europe, where the potentialities of m-learning were assessed. Since the year 2000, the European Commission has supported a financially big number of domestic companies in the creation of contents improvement projects. Hence, there have been numerous projects of the European Union (EU) associated to MALL in the last decade. The research will present them by the importance of their contribution to the field:

1. Mobile learning started its first moves in the M-Learning program for the Learning Skills Development Agency (LSDA) creating educational products. In 2001, it rose with the M-Learning project that offered various mobile devices programmed with educational tools and games. Two hundred and fifty adults from UK, Italy, and Sweden from 16 to 24 years had to cooperate with them. At the end of this research, 80% of the participants believed that these applications may aid them to develop their spelling and reading skills.

2. The eMapps project (Motivating Active Participation of Primary Schoolchildren) which concentrated on explaining how mobile technologies and games could be linked to produce a motivating environment for schoolchildren aged between 9 to 12. Its principal aims were to encourage creativity in the classroom and to play a principal role in improving innovative teaching methodologies depending on learning games, such as memory, physical and problem-solving activity exercises.

3. MOBIlearn, a study and improvement of technologies project for mobile learning which involved many universities from America, Europe and Australia between 2002 and 2005. There has also been an increasing amount of references to MALL at recognized international conferences. IADIS International Conference and Online Educa Berlin, the greatest global conference on technology, give forums for the analysis and presentation of m-learning research which draw the improvement in the area.

4.In this regard, the AITLAS research group (Artificial Intelligent Techniques for Linguistic Applications) commenced its newest project, SO-CALL-ME (Social Ontology-based Cognitively Augmented Language Learning Mobile Environment) in Spain with a huge fund from the Spanish Ministry of Innovation and Sciences. The project has double purposes: first, to create and improve a theoretical framework for a new model of EFL computer-assisted learning executed from mobile devices with constant access to the Internet to reinforce a very portable, interactive, adaptive and effective form of learning. Second, the project aimed to create and improve a linguistic ontology of audio-visual learning objects in order to enable the enrichment of EFL, evading the inherent obstacles in the traditional teaching materials, which are chiefly de-contextualized and static from daily socio-cultural settings. In order to improve our personal applications and viewing a large number of those already accessible on the market, it was regarded very necessary to examine some of the existing ones (As cited in Rodríguez-Arancón, Arús, & Calle, 2013).

Mobile Devices and Language Learning

The growing employment of mobile learning in the language education domain has opened the doors to what is distinguished as language learning promoted by the portability of the student and/or flexibility of mobile devices, or Mobile Assisted Language Learning (Chinnery, 2006; Kukulska-Hulme & Shield, 2008).

These technologies have been employed for language learning objects outside and inside the classroom (Burston, 2014; Kukulska-Hulme, 2010; Kukulska-Hulme & Shield, 2008). MALL research has been executed in the field of learning different languages, such as Italian (Levy & Kennedy, 2005), Irish (Cooney & Keogh, 2007), and French (Demouy & Kukulska-Hulme, 2010; Moura & Carvalho, 2008); but English has been the most investigated language in MALL (Basoglu & Akdemir, 2010; Cavus & Ibrahim, 2009; Hayati, Jalilifar, & Mashadi, 2013; Mahruf, Shohel, & Power, 2010; Nah, White, & Sussex, 2008; Stockwell, 2010).

Language education studies are giving more attention to the expanded usage of mobile technologies, which fracture the barriers of language learning inside the classroom, and equip teachers with the chance to implement more innovative strategies with their learners. MALL studies have made use of several mobile devices, like iPods, PDAs and Mp3), but mobile phones have been the most widespread across research (Burston, 2014; Ducate & Lomicka, 2013; Hoven & Palalas, 2011; Kukulska-Hulme & Shield, 2008).

Recent Research Studies on MALL

Vocabulary retention is one of the basic pillars of acquiring a foreign language (Lu, 2008). Yet, minimal numbers of studies have been conducted in the field of using mobile phone technologies for learning objectives. The deficiency of sufficient vocabulary can be solved by

MALL. Previously conducted vocabulary studies can be classified into studies with the aim of vocabulary development assisted by mobile phones and studies with the aim of vocabulary retention assisted by mobile phones. Therefore, the obstacle of forgetting words or the difficulty of acquiring new words can be solved by mobile-assisted language learning (MALL).

Despite different kinds of educational tools, mobile phones are significantly used in academic purposes as they are cheap and practical when compared to other information and communication technologies (ICTs), and they are very easy to transfer. Mobile phones have several services such as short message service (SMS), which is one of the applications of a mobile phone that has the capacity to send written entries to a number of people at the same time. Lu (2008) stated that one of the reliable learning methods for vocabulary learning in EFL is the transmitting of short messages of vocabulary tasks or lessons, a service that almost all mobile phones have.

Text messages via SMS have been used to stimulate learners to acquire and improve their vocabulary knowledge as indicated in many researches. For example, Jolliet (2007) invented a collaborative paradigm for teaching beginner-level L2 through mobile phones based on an inventory of 50 fundamental words modules (20 words) and linked short dialogues arranged to daily-life topics (i.e., shopping, talking with others, etc.). Students utilized a phone link to record and exercise pronunciation of the conversations and new words, which were administered through a website or an email, and role-play the script with other students through SMS. Results showed significant effect on learner's vocabulary expansion. Cavus and Ibrahim (2009) improved a framework in a method of SMSs to send technical English terms along with the meanings to learners. The conclusion shows that sending terms is beneficial for students' vocabulary growth.

Abbasi and Hashemi (2013) examined the influence of utilizing mobile phones on English language vocabulary retention. The two experimental groups received their daily activity tasks via mobile phone SMS after the end of class and were asked to answer them for the next session. The results were in favour of the experimental group as there were improvements in their vocabulary retention. The findings also demonstrated that there was no observable difference between intermediate EFL male and female learners in terms of their vocabulary retention. The study also showed the importance of this tool and how teachers can use it as an effective pedagogical tool in the classroom rather than preventing it.

Song and Fox (2005) adduced on a pilot study that investigated the utility of mobile phone SMS to enhance the L2 English vocabulary learning of employed adults. The framework was tested for four weeks by 10 enlists as an addition to a web-based multimedia tutorial program. New words and phrases were transferred through SMS twice a day, four days a week. Exam results manifested a marginal development in achievement and a positive adults' attitude towards the application of the blended technologies.

Begum (2011) sought the possibility of using mobile phone as a pedagogical tool in EFL classroom in Bangladesh. The study employed a case study on Jahangirnagar University of Bangladesh to figure out the privileges and challenges of using mobile phones in the classroom. The researcher used message service (SMS) as a method to instruct undergraduate students for teaching prepositions and to test them at the same time. Besides, their test answers were checked and evaluated through SMS. Teachers as well as the students were interviewed to investigate their opinions about the use of mobile phone in the classroom. Also, questionnaire and observation reports towards the benefits and inhibiting factors for the integration of the mobile phone in EFL classroom were given to the students. The research results showed that the mobile

phones had great potential effect as a pedagogical instrument even with some issues that could be solved under the supervision of instructors and by replacing the ethical point of view that considers mobile phones as a cause of distracting for learners ' process of learning in the classroom.

Zhang, Song and Burston (2011) endeavoured to illustrate the influence of vocabulary learning through mobile phones SMS to advance vocabulary learning. A pre-test (TOFEL)/ post-test methodology design was used. The experiment incorporated two groups being chosen carefully and randomly sampled. The researchers sent vocabulary via SMS every day to the forty experimental group as treatment, whereas the thirty eight control group received them through a piece of paper. Results driven through statistical analysis showed that EG had benefitted more than CG in terms of vocabulary improvement.

A recent study by Suwantarathip and Orawiwatnakul (2015) aimed to test the impact of mobile-assisted tasks to enhance vocabulary acquisition of first year university students. The study applied experimental design to find out if there was any effect. The researchers used cluster sampling to choose their samples. Forty of the participants were chosen randomly as the control group (paper-based exercises); the other forty participants were chosen randomly as the experimental group (SMS-based exercises). Pre-test, post-test, and questionnaire were used to figure out whether the use of the mobile phone can support students' vocabulary skill development or not. The findings revealed that the experimental group exceeded the control one in terms of using and learning the target vocabulary. Furthermore, the result of the questionnaire indicated that mobile assisted vocabulary exercises played an important role in increasing learners' motivation and had a dominant influence on their vocabulary enhancement.

In some researches, the application of SMS was analysed with the paper-based method to examine what operated better for learners. Lu (2008) studied learners' attainment after they had received two sets of English words via paper-based and mobile phones format. The conclusion showed that learners who used SMS-based method recalled more words than those learning via the paper-based tasks. Likewise, Tabatabaei and Goojani (2012) carried out a two-month mobile phone-based research to investigate the efficiency of SMS for L2 English vocabulary achievement. Thirty high school juniors wrote sentences between five and six words, which were transferred through SMS to the teacher and peers. A control group of thirty received these words too in a form of written paper. The SMS group notably exceeded the control group on a vocabulary post-test. Both groups and their instructors had positive attitudes toward the utilization of SMS on vocabulary learning.

Another research studied the effectiveness of printed paper compared to mobile phone SMS for the learning of L2 English vocabulary by heart. For 16 gatherings, nearly three times a week for a term of five weeks, 34 university learners were delivered a total of 50 words with example sentences and meanings. Half of the group got these through SMS, whereas the other half received a written hand-out. Standing on the results of a post-test, participants in written paper group showed less significant vocabulary retention than those in the SMS group (Motallebzadeh & Ganjali, 2011).

An insufficient number of research were carried out to compare and contrast the efficiency of sending SMS on mobile phones with the other techniques such as the paper-based technique. All of the endeavours were conducted to use three groups of learners to observe the consequences. For example, Hayati, Jalilifa & Mashhadi (2013) conducted a study to compare amongst three methods of instruction of English idioms, covering self-study learning, Short

Message Service (SMS)-based learning and paper (contextual) learning. This investigation explained SMS essentiality to transmit bite-sized English idiom lessons at separated intervals to the students. More accurately, the utilization of SMS in learning and teaching English (idioms) showed that learners receiving small mini-lessons on their mobile phones through SMS acquired more vocabulary and were more enthusiastic than their rivals on contextual or paper groups. A post-study survey to explore learners' attitudes and comprehension toward mobile learning further reported positive outcomes.

In a different research, Choi and Jeong (2010) examined the impacts of utilizing mobile Long Message Service (LMS) lessons on L2 English vocabulary learning. Three styles of instruction were applied: LMS lessons with teacher-learner interactive messages; a control group utilizing paper materials and LMS lessons. An overall of 72 L2 English college learners were allocated to one of the three groups. The consequences revealed that adopting LMS lessons was more useful and productive than using paper materials for vocabulary learning. Still, there were no notable diversities in achievement amidst non-interactive versus interactive LMS. In like manner, Saran, Seferoglu & Cagiltay (2012) examined the effectiveness of employing mobile phone-based multimedia messages (MMS) in learning L2 English vocabulary associated with delivery via printed form and web pages. The MMS involved the meanings of words, pronunciation, word formation information, associated visual representations, and model sentences. The four-week experiment included 103 English preparatory school seniors and exams showed that learners who were sent MMS acquired more words than those who studied the paper- based and the web-based materials.

Nowadays, mobile applications for ESL and EFL are run with operating systems like Google’s open source Android, Microsoft’s Windows 10 and Apple’s iOS. These operating

systems are becoming more sophisticated and now have the capacity to considerably advance this field. These operating systems in portable devices promote collaborative and personalized learning and extend the opportunity to improve technology that will help learners to learn anywhere and anytime. A lot of applications (software) for tablets, i-pod players, and mobile phones had been already used widely in EFL.

For instance, Başoğlu and Akdemir (2010) compared the use of mobile software feature. The study executed a mixed methods research design. The study involved 60 undergraduate students in a preparatory school of a public university. The choice was based on their marks and performance in the university entry test. Students whose mobile phones were compatible with the vocabulary learning program (flashcard software) were chosen as the experimental group consisting of 30, and the other 30 students who did not have vocabulary learning program were chosen as the control group (using paper-based technique). Quantitative data were collected using the pre-test and post-test. After the questionnaire part of the study, qualitative data were collected using semi-structured interview questions. The first finding indicated that the use of the vocabulary learning program in the mobile phones improved the vocabulary level of the learners. The second finding indicated that by the use of flashcards, students' vocabulary learning improved. The third finding indicated that by the use of vocabulary learning program on mobile phones, students' vocabulary improved significantly compared to the control group method.

Although most studies have arrived at valuable conclusions regarding the potential and effectiveness of the use of mobile phones in vocabulary learning in EFL classroom, less encouraging findings have been shown by Stockwell (2010). The results of both of his studies showed that vocabulary learning via mobile phones were not more beneficial than through desktop computers. No significant differences were identified in terms of learners' performance

in vocabulary learning with the two technologies which raised a lot of questions about the reliability of these technologies in the area of education. Nevertheless, the researcher believes that using it in the right atmosphere will bring valuable insights to the learners' vocabulary. See table 1.

Table 1

Summary of Mall studies

Authors/year	Country	Research method	Cell phone feature	Variable measured
Abbasi & Hashemi (2013)	Iran	Experimental survey	SMS (daily task)	Students retention
Basoglu & Akdemir (2010)	Turkey	Quantitative	Flashcard application	Learning Student perceptions
Begum (2011)	Bangladesh	Mixed Methods survey	SMS (Quizzes)	Teacher & student perceptions
Cavus & Ibrahim (2009)	Turkey	Quantitative	SMS (vocabulary)	Learning
Choi & Jeong (2010)	Korea	Quantitative	LMS (vocabulary)	Student perception
Hayati et al. (2013)	Persia	Quantitative	SMS (vocabulary)	Student perception
Lu (2008)	Taiwan	Experimental survey	SMS (Vocabulary)	student perception
Saran, Seferoglu, & Cagiltay (2012)	Turkey	Quantitative	MMS (vocabulary)	Student perception
Song & Fox (2008)	China	Qualitative	SMS (vocabulary)	Students perceptions
Stockwell (2010)	Japan	Quantitative	PC & Cell phones/SMS	Platform preference
Suwantarathip & Orawiwatnakul (2015)	Thailand	Quantitative	SMS-based exercises	Learning
Tabatabaei & Goojani (2012)	Iran	Quantitative	SMS (Vocabulary)	Student & teacher perception
Zhang, Song & Burston	china	Quasi-experimental	SMS (vocabulary)	Learning

CHAPTER III

METHODOLOGY

"Research methodology is a way to systematically solve the research problem" (Kothari, 2005, p. 8). This chapter provides the methodology and elaborates on the entire research design and the research context. It provides general information about the participants and sampling, data collection and data analysis procedures employed in this research study.

Research Design

According to Blakstad (2008) "Experiments are conducted to be able to predict phenomena. Typically, an experiment is constructed to be able to explain some kind of causation. Experimental research is important to society - it helps us to improve our everyday lives" (Aims of Experimental Research, para.1). Therefore, a quasi-experimental study with one experimental group (EG) and one control group (CG) was compared in this research in order to investigate whether or not integrating mobile phones in EFL classrooms will have a relevant effect on students' vocabulary retention ability and examine the effect of learners' perceptual modality on the way they retain information. With this in mind, the control group was trained utilizing strategies other than integrating mobile phones in the EFL classroom (paper-based); whereas the experimental group was trained utilizing mobile phone features in the EFL classroom integrating SMS and a mobile phone software designed by the researcher. The researcher employed a pre-test, two questionnaires and two KET post-tests to examine both groups in the initial stage and after the end of the experiment. One of these two post-tests (KET) was for the SMS phase and the other was for the mobile software phase.

The dependent variable was students' accomplishment in their ability to retain words; while the independent variables of the study were utilizing the two mobile phone features (SMS and the mobile application) and the paper- based technique, in which all the words are written on a paper and the CG refer to them when they want to retain words. The experiment continued for six weeks. The researcher did not use any electronic devices other than a mobile phones and alerted the experimental group to make sure that their mobile phones are charged all the time.

Moreover, the students were asked to respond to a questionnaire survey for the sake of collecting data about their learning styles (perceptual modality) that might play a dominant role in helping the students to retain new vocabulary via utilizing the traditional paper-based way or via the integration of mobile phone features in the EFL classroom. At the end of the experiment, Vocabulary Retention Software (VRS) questionnaire was used to explore the experience of the experimental group after the usage of the mobile software VRS.

The aim of this research design was to employ the best methods to collect data and completely cover the area of the study. A Pretest-Posttest Control Group Design was used in this research paper. The (PPCGD) varies from the Randomized Post-Test-Only Control Group Design entirely in the application of the pre-test. In this design, two groups of subjects are managed, with both groups being weighted or examined twice. Yet, in this research study, the design is used thrice as the researcher implemented two tools for the purpose of measuring two mobile phone SMS and VRS. Judgmental Sampling was applied to form the groups by picking students whose mobile phones support VRS and assigned them as the experimental group (EG), whereas the rest were assigned as the control group (CG). The observation or measurements were gathered at the same time for both groups. A table of this design is as follows.

Table 2

Research Design

	Group	pre-test	independent variable	post-test (1)	independent variable	post-test (2)
Experimental group - using a mobile phone in retaining new vocabulary	M	O	X	O	X	O
Control group – using traditional method in retaining new Vocabulary	M	O	C	O	C	O

M= selection based on certain variables. **O**= tests used in the study. **X**=mobile phone feature. **C**= paper-based

Participants

The study was conducted at Omar Al-Mukhtar University which is located in the downtown of the fifth largest city in Libya, Dernah. This specific public university, which was founded in 1961, was chosen to conduct this study due to language learners study at this university. Forty EFL students of Omar Al-Mukhtar University participated in the study. All the students were first year freshmen students of the English Department of the University. The students had common features like having Arabic as their mother tongue, English as a foreign language and everyone was Libyan in origin. The age of the students ranged from 18 to19. The students were chosen from the university according to their marks in the university entrance exam. Unfortunately, the mobile software was only working with Android operating system.

Within the members of class having the same characteristic, students' whose mobile phone supported vocabulary software program were chosen. Among the student groups, twenty students whose mobile phones suited with the vocabulary learning program were assigned the experimental group (EG); whereas the other twenty students whose mobile phone did not support the vocabulary learning program were considered as the control group (CG). The students were given the instructions and the words by the researcher in certain meetings previously organized with the Dean of the faculty of Arts and Sciences.

Data Collection Instruments

To investigate the research questions four data collection materials were employed in this research study.

The pre-test was taken from a book *Test Your Vocabulary elementary level (Watcyn-Jones, 2000)*. The aim of this test was to figure out the students' current equivalence of vocabulary knowledge before the implementation of the study and to make sure that all the participants were at the same level of proficiency before the start of the study. Hence, the test consisted of 30 fill in the gaps items, in which the students were asked to write down the synonyms of the given adjectives and verbs from a box provided beside (See Appendix **A**).

Second, the instrument used in this research study was the Perceptual Modality Preference Survey (PMPS) advanced via Cherry in 1981 as part of his doctoral thesis work (Crannell, 2011) (Appendix **B**). Cherry's 1981 questionnaire was adopted in this study to gauge the ability to recall paired information in seven perceptual modalities: interactive, visual, haptic, kinesthetic, print, aural, and olfactory. The PMPS, 42 item questionnaire, is a must option. With this intention, any perceptual style element is contrasted with each of the other learning styles twice and in reverse sequence. The students answer to every question with one of the following

options: Always, Usually, Seldom, or Never. The answers are scored with a positive score (accepting statement) or a negative score (refusing statement). This method solves any incompatible answers (Cherry, 1981). The scores are organized from, high to low, to generate a most favored modality to a minimally favored one. To obtain the highest division among components and avoid allocating unnecessary value to any one element, Cherry affirmed that both style elements in any question should get a score value. All modalities are scored 12 times, six in the initial placement and six in the secondary placement. When the modality is in the initial placement the scoring system is as follows: always = + 4, usually = +2, seldom = -2, and never = - 4. When the modality is located in the secondary placement, the scoring system is as follows: always = - 2, usually = - 1, seldom = + 1, and never = + 2. The score range is from + 36 to – 36. Upon fulfillment of the survey, the scores are calculated and arranged in rank order to show the students' most favored learning style to their least favored learning style (Cherry, 1981). Due to the researcher direct contact with Dr. Cherry, a translated Arabic PMPS survey was sent with other attached documents to help measure the different perceptual modalities of the students.

Then, the researcher employed two Key English Test (KET) post-tests, one after the first 60 words and the other after the remaining 60 words, to see if there was any statistically significant difference between the two groups and which technique was more useful for the retention of the vocabulary among the experimental group and the control group. KET exams are authorized and prestigious tests legalized by University of Cambridge and recognized almost all over the world (International House Aberdeen [IH], 2016). KET is a test for evaluating people who can use every day written and spoken English at an elementary level. The tests were consisted of three parts, each containing approximately six questions. The students were asked to

choose the right answer among match, fill in the gaps and write down words activities (see Appendix C).

A Software application was also used by the researcher for the experimental group to help them remember words. This software enabled the students to retain (GSL) Bauman's general service list (West, 1953) wherever and whenever they want in three weeks period. Vocabulary Retention Software (VRS) is the name of the software application, which is available on Android store. After experimental group's students downloaded the VRS into their mobile phones, the researcher inserted the 60 words in the program to start the experiment.

A questionnaire designed by the researcher written in English and translated into Arabic was used to collect data to investigate the experimental group's opinions towards the use of VRS for vocabulary retention (See Appendix D). The VRS questionnaire was translated into Arabic since the learners' level of English would not be sufficient to respond and comprehend the items in English. The first draft of the questionnaire was prepared. Then the questionnaire was given to the supervisor, items were modified, and developed. Following the first draft, the final version of the questionnaire was prepared. The Arabic version was checked and back-translated into English as well by two lecturers at Omar Al-Mukhtar University. A comparison of the two English versions appeared to be alike and therefore no alterations were performed to the translated questionnaire. The questionnaire consisting of 19 close and 2 open-ended items had two separate parts; the first part contained 15 statements about using VRS as mentioned above where the participants would respond using a five-point Likert scale ranging from strongly agree to strongly disagree, while the second part of questionnaire contained 5 items about the advantages and disadvantages of VRS. The final item in the questionnaire urged the students to rate VRS out of five stars.

The questionnaire was used with an interview to measure the students' opinions regarding the use of VRS for educational purposes. Qualitative data collection can be executed in various ways like telephone interviews, utilizing online media and face-to-face interviews (Seale, 2004). For this study, face-to-face interviews were chosen for qualitative data collection. A semi-structured interview is a qualitative technique of analysis that involves a pre-defined series of open questions with the chance for the interviewee to add further responses (Zorn, 2010). Semi-structured questions were used in this study to enable the subjects to talk freely within the scope of the question. Four questions were asked in the interview that lasted for one and half hour. In this regard, the experimental EG semi-structured interview was conducted by six students from the EG to reveal further information concerning the use of VRS for vocabulary recalling in and out the classroom, and to learn about the benefits and challenges of VRS as language learning tool in EFL learning (Appendix E). The interview was mainly concentrated on four areas: the place and the time of using VRS, the perceived positive impacts of using it and the advantages and disadvantages of using VRS The interview was conducted in Arabic and translated in English by the researcher due to the EG were not able to fully express their experience in English. Details of the interview questions are also discussed in the findings and discussion chapter.

Data Collection Procedure

The main procedure for this study consisting of seven phases which took place in the language lecture rooms of the university on the first week of November for six weeks. Before the start, all ethical approvals were obtained to ensure privacy and safety of all the participants according to the academic norms and guidance (See appendix F).

Phase I: In this phase, all the details and objectives of the experiment were fully explained after receiving written consent from the Dean of the faculty of Arts and Sciences (see Appendix G). Then, before any instruction and grouping, a questionnaire (PMPS) consisting of five-point Likert scale was administered to the students to measure their most preferred style of learning and also to figure out if there was any impact on learners' ways of vocabulary retention.

Phase II: (Test Your Vocabulary TYV) Pre-test. After dividing the student to two groups, the researcher used TYV to make sure that all the participants were at the same level of proficiency and in order to eliminate the threats of external validity and likewise to check their knowledge of the vocabulary items.

Phase III: Acquiring new vocabulary items (1). One hundred and twenty words were chosen for this study to examine the students' ability to retain these words. These words were selected from Bauman's General Service List (GSL), which consists of 2284 words. These words are the most frequent words in the English language that every student at this level should know in order to improve their level (Logic of English, 2011). On average, the GSL represents 82% of words used in English (Nation and Waring, 1997). As the words were not organized in alphabetical order, one word in every 20 words was randomly selected from the list in order to be used in the study.

During the first three weeks, 60 words on sheets of paper were given to the control group through a face-to-face distribution at the end of the lecture, while, the experimental group received the same 60 words through SMS. The members of both groups determined by themselves the number of words to learn each day. Fortunately, bulk messages could be delivered to a group of maximally 32 people at one time, just enough to accommodate the experimental group. For the experimental group, mobile phone numbers were first collected from

the subjects with their consent. Based on the subjects' preferred times of message delivery gathered prior to the start of this experiment, an SMS message consisting of ten vocabulary items was sent out on a regular basis six times a week. Such message delivery lasted 21 days from November 2 to 23, 2016.

Phase IV: Testing phase (1). After the third phase (i.e., learning phase), the researcher give the experimental and control group the first post-test (KET 1) for the first 60 words they learned in the three weeks' time, to enable the researcher to see if there are a change between the experimental group (EG) and the control group (CG) in terms of vocabulary retention ability using SMS mobile feature.

Phase V: Acquiring new vocabulary items (2). During the last three weeks, the researcher gave the last 60 words using the same method used previously for the control group (sheet of paper), whereas the experimental group were given the vocabulary in their downloaded mobile researcher designed software (VRS). The installation of the VRS, its different parts and how to use it are all described and overviewed in Appendix H. A push notification (Kindly check today's words) was sent by the researcher at regular intervals. The experimental group agreed to send these push notification at the same period of time used in the SMS phase. On the contrary, students in the control group were not allowed to use VRS in their mobile phones during the period that ended on the 14th of December.

Phase VI: Testing phase (2). The researcher tested the other 60 words to see if there was any difference. By the end of the experiment, the researcher was able to find out if there was any significant difference between the two groups and which technique was more useful for the retention of the vocabulary between the participants of the study.

Phase VII: EG opinions on VRS: A VRS questionnaire designed by the researcher was administered to the experimental group members only after the second post-test. The questionnaire was used to examine their experience upon the use of VRS to recall vocabulary and to find out if any problem were encountered during using it in phase V. By the same token, the researcher chose randomly five students from the EG by drawing names out of the hat using Excel. The interview and the questionnaire helped the researcher to explore the effectiveness of the VRS for retaining vocabulary in EFL learning.

Reliability and Validity

Validity indicates how useful the test is used in the study. Reliability pertains to the degree the instrument or the test generates the equivalent outcomes on frequent events (M. Gall, J. Gall, & Borg, 2007). In order to measure the reliability and validity of the PMPS questionnaire in the Libyan culture and environment, some steps were carried out. To begin with, validity was executed to figure out and evaluate the cultural appropriateness of the questionnaires so they were handed to three professionals (Dr. Fadil F Elmanfi, Ahmed M Eljibani, and Abd Salam M Obiadi) who are lectures majored in English Language Translation and Literature at Omar Al-Mukhtar University. They affirmed that the items were suitable and beneficial for the goal of the study.

Additionally, the reliability of the PMPS was measured in Harvey's 2002 work: The seven perceptual modalities showed total acceptable rates for achieving reliability. Nunnally (1978) recommended satisfactory acceptable rates are amidst .60 to .80. Carmines and Zeller (1979) suggested that reliability scores over .80 are adequate to accomplish reliability. Harvey's measurements were: Interactive (.68), visual (.68), haptic (.69), and aural (.71) all manifested acceptable reliability ($.68<\alpha<.80$). The remaining three modalities: olfactory (.84), print (.85),

and kinesthetic (.86) obtained very high (α>.80) proving internal consistency of the PMPS see Table 3.

Table 3

Reliability Results (Harvey, 2002)

Modality	Aural	Haptic	Interactive	Kinesthetic	Olfactory	Print	Visual
(α)	.71	.69	.68	.86	.84	.85	.68

Note (α) =Cronbach Coefficient Alpha

In order to check the reliability and validity of the VRS questionnaire in the Libyan context, some steps were carried. First, the validity was executed by the supervisor of the study; with a view to finding out and determines the appropriateness of the questionnaire. The supervisor stated that the items were beneficial and suitable for the aim of the study. In addition, a pilot study was carried out in order to measure the reliability of the VRS questionnaire. The participants of the pilot study consisted of 15 students from Omar Al-Mukhtar University, second-year students. The reason behind carrying out a pilot study was to see if the participants of this study would face any difficulties comprehending the items. The respondents of the pilot study did not face any problems or ambiguity to understand the items in Arabic during the completion of the questionnaire. They all confirmed that the statements were comprehensible and suitable for use in the study. Comparatively, in order to evaluate the reliability of the questionnaire, Cronbach Alpha was used to measure the reliability. The Cronbach Alpha in this questionnaire was calculated as .764. As a result, the VRS questionnaire was reliable to administer to the EG to fulfill the aim of the study (see Table 4). Brown (2002) stated that "Cronbach alpha is used to estimate the ratio of variance that is systematic in a set of test scores. For example, if the Cronbach alpha for a set of scores turns out to be .90, you can interpret that

the test is 90% reliable and 10% is unreliable" (p.17). In the case of the current study, the Cronbach alpha scores indicated that the results of the study were reliable.

Table 4

Reliability of the Questionnaire

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.746	.732	15

Data Analysis

In the analysis of data, students received two points for each of their correct answers. Scores range from 0 to 30 in the tests. These independent pre and post-tests (t-tests) were used in the quantitative analysis to find out the difference in performance between the two groups. The t-test was calculated using statistical package for social sciences (SPSS .18) for the consistency of the reliability. Whereas, the second method of data analysis concerned inferential statistics, i.e., to examine the preference of the students in terms of their learning styles preferences. As such, a T-test was used to obtain the required results. The standard $p<0.05$ was used for the analysis of the questionnaire. The questionnaire and post-tests were very useful to find out whether integrating mobile techniques can make the experimental group better in vocabulary retention as compared to the control group and whether perceptual modality can have a dominant effect in the ways that the students recall vocabulary.

After the collection of the VRS questionnaire, the data were analyzed quantitatively by using the Statistical Package for Social Sciences (SPSS). The responses of the participants in the second questionnaire and the interview in the experimental group were computed to find out the

means and standard deviations of the items in order to find out whether the use of VRS was effective to use for educational purposes, particularly vocabulary retention.

CHAPTER IV

FINDINGS AND DISCUSSION

Introduction

Chapter IV presents the findings revealed from the data collected through the qualitative and quantitative tools described in Chapter III and discusses them in relation to the aim of the study. As mentioned in the previous chapters, the purpose of this research study was to examine if the implementation of mobile phone SMS and VRS were more effective than the traditional way of retaining and improving vocabulary inside and outside the classroom. The study also investigated whether or not perceptual modality could play a principal part in retaining new vocabulary items. In like manner, the research aimed to examine the participants' opinions regarding the use of mobile technologies to retain and improve vocabulary. This experimental study included a class of forty students in the Libyan Republic.

Data were collected through pre-test, questionnaire, and post-test. A pre-test provided a general overview on students' vocabulary knowledge level. One of the questionnaires uncovered the overall perspectives on how the students preferred to learn or retain vocabulary items when they were exposed to the materials and the other investigated their opinions regarding the use of mobile phones in vocabulary development and retention. For a more in-depth analysis of the research aim, two post-tests were administered to discover the most efficient way to recall vocabulary. In other words, the analytical process in this Chapter was based on the following research questions:

1. Does the intervention of mobile phone SMS technique in EFL classroom help elementary EFL learners to recall vocabulary items better?

2. Does VRS software employed in EFL classroom help elementary EFL learners to improve and recall vocabulary items better?

3. Do elementary EFL learners' perceptual modalities significantly affect the way they retain vocabulary with respect to different techniques using the mobile phone?

4. What are the EG opinions regarding the use of mobile technology (VRS) to improve and retain vocabulary?

Descriptive statistics employed in this research were mainly means and standard deviation. The data was analysed through the Statistical Package for the Social Sciences (SPSS) version 18. Two valid and reliable instruments were employed; (PMPS and VRS), to gauge the learners' opinions and preference of learning and retaining vocabulary. In addition, two post-tests KET exams and one pre-test were also used. Finally, an interview at the end of the study was employed to the EG to uncover their opinions regarding the use of VRS.

Homogeneity of the Two Groups

Various statistical analyses were carried out to clarify the research questions in this study. TYV Test was administered at the first session of the study in order to measure the homogeneity of the two groups, the students were categorized into two groups of experimental and control. The pre-test mean scores of the control group and experimental group were analysed to detect if they were identical or alike before the experiment commenced, using an independent sample t-test. As shown in Table 5, the results showed the mean score of subjects in the experimental group (22.25) was a little bit higher than that of the students in the control group (22.20). The very alike means on the pre-test revealed that the two groups were almost at the same level which meant that there was not any significant difference in the means of the pre-test between the two groups before the experiment started and the two groups started with the same

proficiency level. Therefore, it can be concluded that both groups were not initially different but identical at the outset of the study.

The Levene's Test for equality of variances in Table 6 (t=.127, df= 38, sig= .842, α =.05), displays that the variance of the two groups was equivalent and there was no variation amidst the mean scores of the two groups; hence, it can be concluded that they were at similar level of proficiency and consequently, homogeneous.

Table5

Descriptive Results for TYV as a Homogenizing Test

	Groups	N	Mean	Std. Deviation	Std. Error Mean
pretest	Control group	20	22.2000	1.28145	.28654
	Experimental group	20	22.2500	1.20852	.27023
	Mean Difference		0.5		

Table 6

The Difference between Control and Experimental Groups across TYV Scores

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	.040	.842	-.127	38	.900	-.05000	.39387	-.84734	.74734
Equal variances not assumed			-.127	37.870	.900	-.05000	.39387	-.84743	.74743

Mobile phone SMS Phase Analysis

This study needed a comparison of two groups drawn from the population of university first grade language students in Dernah, a city in Libya. The first research question was handled through an analytical process with reference to a descriptive statistics from 40 students. The overall results of this question are shown in Table 7 with mean scores from 30 points and standard deviations. The result of the independent t-test has shown that the post-test (1) scores (M= 22.75, SD = 2.78) of the SMS-based group were statistically higher than the scores of the paper-based group (M=19.65, SD = 2.66). Therefore, it can be concluded that the intervention of the mobile phone was more effective than the paper-based technique.

To gain further understanding of the first research question, an independent t-test was employed to compare their mean scores and see if there was a significant difference between the two groups. As can be seen in Table 8, there was a significant difference between the two groups mean scores in the post-test of vocabulary (t = -3.59; P = .01). This finding assures that the utilization of mobile phones via SMS to remember new words developed students' vocabulary retention ability. Students in the control group (paper-based) achieved lower scores on the vocabulary post-test at the end of the first phase of the study compared to the experimental groups' (SMS-based) scores. Although students had a short practice of vocabulary learning through mobile phones, its portability and effortless access enabled students to adjust to this new learning mode.

Table 7

Mean Scores of the Experimental and the Control Groups on Post Test (1)

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest **(1)**	Control	20	19.6500	2.66112	.59505
	Experimental	20	22.7500	2.78860	.62355
	Mean Difference		3.1		

Table 8

Independent Sample t-test Result for the post-vocabulary Test (1) Scores of the Experimental and Control Groups

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Posttest	Equal variances assumed	.985	.327	-3.597	38	.001	-3.10000	.86191	-4.84485	-1.35515
	Equal variances not assumed			-3.597	37.917	.001	-3.10000	.86191	-4.84498	-1.35502

Mobile Phone VRS Phase Analysis

This research study focused on the educational opportunities that mobile phones provided to the participants. Hence, the second research question addressed how learning vocabulary helped elementary EFL learners to remember words better through the intervention of mobile phone VRS technique in EFL classroom. Students in the experimental group downloaded and

used VRS (Vocabulary Retention Software) in their mobile phones outside the university and sometimes inside it; while the control group was given the vocabulary lists the same way as in the SMS phase. After the end of the period, which lasted three weeks, the data were handled through an analytical process with reference to a descriptive statistics from 40 students. The overall results of this question are shown in Table 9 with mean scores out of 30 points and standard deviations. The result of the independent t-test has shown that post-test (2) score of the Software-based group (experimental) (M=24.30, SD = 3.29) was higher than the score of the paper-based group (Control) (M=19.70, SD = 2.67). In other words, this finding shows that the use of vocabulary learning program in the mobile phone improved students' vocabulary retention ability.

The comparison between the two groups was conducted with the independent t-test. The findings showed that there was a significant difference between the post-tests of the experimental and control groups (t = -4.84; P = .00). As it is shown in Table 10, there was a significant rise in the EG group retention ability, while the control group mean score increased more than the SMS phase but not significantly. This indicates that the mobile phone learning experience has played a dominant positive role in the students' vocabulary development.

Table 9

Mean Scores of the Experimental and the Control Groups on Post Test (2)

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest **(2)**	Control	20	19.7000	2.67739	.59868
	Experimental	20	24.3000	3.29433	.73664
	Mean Difference		4.6		

Table 10

Independent Sample t-test Result for the post-vocabulary Test (2) Scores of the Experimental and Control Groups

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
posttest **(2)**	Equal variances assumed	1.744	.195	-4.846	38	.000	-4.60000	.94924	-6.52163	-2.67837
	Equal variances not assumed			-4.846	36.475	.000	-4.60000	.94924	-6.52427	-2.67573

As has been noted, students in the experimental group achieved better scores on the two vocabulary post-tests (1, 2) compared to the other group at the end of the study. This finding shows as well that the paper-based method used for the control group also enabled students to improve their vocabulary learning but not as much as the experimental group. To summarize, the two groups evidenced no significant difference in terms vocabulary knowledge before the study was carried out. After the treatments, there was a significant difference between the two groups in terms of their vocabulary gains, revealing that the EG did better than the CG. Despite the brief experience of mobile vocabulary learning, adult students believed that mobile phones assisted them to retain and learn new vocabulary items in a convenient manner, thus indicating its pedagogical potential. More information about their opinions are discussed in the interview analysis.

Perceptual Modality Analysis

To be able to answer the third research question on whether perceptual modalities significantly affected the way students retain vocabulary with respect to different techniques using mobile phones, students' responses were computed. The data were taken from perceptual modality preference survey (PMPS) to analyse the inferential statistics. An independent sample t-test was conducted to determine the effect of perceptual modality learning preference on the 40 students. The students were divided into two groups: control group and experimental group. Therefore, the analysis involves comparing data between two groups. The dependent variables were seven perceptual modalities: Print, Aural, Interactive, Haptic, Olfactory, Visual and Kinaesthetic and the independent variables were the two groups of learners.

The descriptive statistic in Table 11, showed perceptual preference for the control group (n=20) as follows: Print M 19.40, SD 11.04, Aural M 3.50, SD 13.42 Interactive M 8.10, SD 12.38, Visual M 3.40, SD 13.01, Haptic M -4.65, SD 11.97, Kinaesthetic M -8.55, SD 12.60, and Olfactory M -15.75, SD 10.37. Experimental group (n=20) results were: Print M 10.85 SD 14.47, Aural M 7.25, SD 12.40, Interactive M 13.15, SD 8.21, Visual, M 10.60, SD 11.67, Haptic M -7.55, SD 14.26, Kinaesthetic M -6.55, SD 14.96, and Olfactory M -19.40, SD 10.13.

Table 11

The Mean Scores and the SD of the PMPS for the Experimental and Control Groups

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Print	Control	20	19.4000	11.04727	2.47024	14.2297	24.5703	1.00	36.00
	Experimental	20	10.8500	14.47057	3.23572	4.0776	17.6224	-20.00	29.00
	Total	40	15.1250	13.42441	2.12259	10.8317	19.4183	-20.00	36.00
Haptic	Control	20	-4.6500	11.97486	2.67766	-10.2544	.9544	-20.00	17.00
	Experimental	20	-7.5500	14.26248	3.18919	-14.2250	-.8750	-29.00	24.00
	Total	40	-6.1000	13.08121	2.06832	-10.2836	-1.9164	-29.00	24.00
Aural	Control	20	3.5000	13.42621	3.00219	-2.7837	9.7837	-36.00	33.00
	Experimental	20	7.2500	12.40490	2.77382	1.4443	13.0557	-15.00	30.00
	Total	40	5.3750	12.89939	2.03957	1.2496	9.5004	-36.00	33.00
Kinaesthetic	Control	20	-8.5500	12.60524	2.81862	-14.4494	-2.6506	-27.00	19.00
	Experimental	20	-6.5500	14.96830	3.34701	-13.5554	.4554	-24.00	26.00
	Total	40	-7.5500	13.69625	2.16557	-11.9303	-3.1697	-27.00	26.00
Interactive	Control	20	8.1000	12.38378	2.76910	2.3042	13.8958	-17.00	26.00
	Experimental	20	13.1500	8.21600	1.83715	9.3048	16.9952	-2.00	31.00
	Total	40	10.6250	10.68353	1.68921	7.2082	14.0418	-17.00	31.00
Olfactory	Control	20	-15.7500	10.37647	2.32025	-20.6063	-10.8937	-36.00	3.00
	Experimental	20	-19.4000	10.13800	2.26692	-24.1447	-14.6553	-32.00	6.00
	Total	40	-17.5750	10.29286	1.62744	-20.8668	-14.2832	-36.00	6.00
Visual	Control	20	3.4000	13.01982	2.91132	-2.6935	9.4935	-15.00	25.00
	Experimental	20	10.6000	11.67724	2.61111	5.1349	16.0651	-13.00	31.00
	Total	40	7.0000	12.74000	2.01437	2.9255	11.0745	-15.00	31.00

In this study, the analysis of the independent sample t-test was used to determine if there was a statistically significant difference of each perceptual modality subset. Results of the analysis of this study are presented in Table 12. The overall independent t-test analysis for the differences in perceptual modality between the experimental and control group revealed no significant difference between the two groups. A significant difference was indicated below the level of 0.5.

The first non-significant difference was found in Haptic learning style between the EG and, CG (t= .696, df= 38, sig= .533, α =.05). The results showed that the EG (M=-4.65) were not different from the CG (M=-7.55). In case of Aural learning style, (t= -.917, df= 38, sig= .892, α =.05), Kinaesthetic learning style, (t= -.457, df= 38, sig= .629, α =.05), Interactive learning style, (t= -.1520, df= 38, sig= .34, α =.05), Olfactory learning style, (t= -.1.125, df= 38, sig= . 911, α =.05), and Visual learning style (t= -1.841, df= 38, sig= . 443, α =.05), the results showed no significant difference between the groups. This goes in line with Crannell (2011) whose study showed no significant difference among a four preferred practice areas of registered nurses in their perceptual modality learning preference.

The Print learning style had also non-significant difference, (t= 2100, df= 38, sig=. 197, α =.05). This does not go in line with Koch (2004) whose study found a significant difference at the .001 level among the various educational attainment levels for Print, Aural, Interactive, Visual and Olfactory subsets. In the final analysis, the two groups surveyed in this study displayed no significant difference in learning styles based on .05 probabilities. Therefore, perceptual modality doesn't play a dominant role in the retention of the learners.

Table 12

Independent t-test Sample for the Analysis of the Difference in Learning Styles between the EG and CG

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Print	Equal variances assumed	1.728	.197	2.100	38	.042	8.55000	4.07087	.30896	16.79104
	Equal variances not assumed			2.100	35.532	.043	8.55000	4.07087	.29012	16.80988
Haptic	Equal variances assumed	.395	.533	.696	38	.490	2.90000	4.16423	-5.53004	11.33004
	Equal variances not assumed			.696	36.895	.491	2.90000	4.16423	-5.53834	11.33834
Aural	Equal variances assumed	.019	.892	-.917	38	.365	-3.75000	4.08745	-12.02461	4.52461
	Equal variances not assumed			-.917	37.765	.365	-3.75000	4.08745	-12.02630	4.52630
kinaesthetic	Equal variances assumed	.237	.629	-.457	38	.650	-2.00000	4.37574	-10.85822	6.85822
	Equal variances not assumed			-.457	36.931	.650	-2.00000	4.37574	-10.86665	6.86665
Interactive	Equal variances assumed	4.833	.034	-1.520	38	.137	-5.05000	3.32310	-11.77727	1.67727
	Equal variances not assumed			-1.520	33.012	.138	-5.05000	3.32310	-11.81082	1.71082
Olfactory	Equal variances assumed	.013	.911	1.125	38	.268	3.65000	3.24384	-2.91681	10.21681
	Equal variances not assumed			1.125	37.979	.268	3.65000	3.24384	-2.91693	10.21693

Visual	Equal variances assumed	.602	.443	-1.841	38	.073	-7.20000	3.91071	-15.11683	.71683
	Equal variances not assumed			-1.841	37.559	.074	-7.20000	3.91071	-15.11988	.71988

EG opinions towards VRS

The forth research question examined the experimental group EG students' opinions regarding the use of VRS for vocabulary learning and retention (see Appendix I). As it is clearly seen in Table 13 the highest mean scores were observed in Statements 10, 7, 5, 3, 8, 14, 9, and 1 which showed that the EG had highly positive opinions regarding these statements.

Table 13

EG Positive Opinions regarding VRS

	statement	Mean	SD	Level
10.	I like to use VRS for its advantages such as: regular push notification	4.15	.87	positive
7.	The practice of using VRS is an easy process.	4.05	.75	positive
5.	I consider the availability of the modern mobile phone applications for the students to use for educational purposes is a must.	3.95	1.19	positive
3.	Vocabulary Retention increased my vocabulary knowledge in a significant way	3.95	.68	positive
8.	I prefer using VRS because it is possible to use it anywhere and any time.	3.85	.93	positive
14.	I encourage my colleagues to download VRS for its effectiveness in recalling words.	3.85	.67	positive
9.	I feel comfortable when I use VRS because it saves time and effort.	3.80	.95	positive
1.	VRS is a very useful reference tool for teaching vocabulary inside and outside the classroom.	3.65	.67	positive
15.	I think that Vocabulary Retention will play an important role in e-learning in the future.	3.50	.82	neutral

When considering each item, it was found that the highest mean score was on number 10 “I like to use VRS for its advantages such as: regular push notification.” which received a mean score of 4.15. This finding reveals that EG learners found the regular push notification as a useful application tool to remind them to revise the list of the daily words that needed retention. Following this, Statement 7 “The practice of using VRS is an easy process.” with a mean score of 4.05 received the second highest mean score. This finding reveals that EG group found that VRS is easy-use software for recalling words. A little bit lower than Statement 7, Statement 5 “I consider the availability of the modern mobile phone applications for the students to use for educational purposes is a must.” also received a positive mean score of 3.95 and to prove the EG positive view about the implementation of mobile technology for educational purposes. Moreover, Statement 3 “Vocabulary Retention increased my vocabulary knowledge in a significant way” with a mean score of 3.95 was also among the highest mean scores. The EG learners believed that VRS improved their vocabulary knowledge sharply. In addition, statement 8 “I prefer using VRS because it is possible to use it anywhere and any time ”, with a mean score of 3.85 shows that EG students had a positive opinion about the portability and flexibility of mobile phones in learning and remembering words. It seemed that a considerable number of the EG learners had a positive opinion about statement 14 “I encourage my colleagues to download VRS for its effectiveness in recalling words.” with a mean score of 3.85. Statement 9 “I feel comfortable when I use VRS because it saves time and effort.” with a mean score of 3.80 and statement 1 “Vocabulary Retention software is a very useful reference tool for teaching vocabulary inside and outside the classroom.” with mean score of 3.65 also were among the highest mean scores. Finally, statement 15 “I think that Vocabulary Retention will play an important role in e-learning in the future.” with a mean score of 3.50 showed a neutral opinion towards the use of VRS in the future of e-learning.

Regarding the statement 6 “I hate using VRS in university education because I do not know its use” which was among the last six statements, which had the lowest mean scores, the participating EG learners were asked to state whether they agreed with it. The result showed that they did not agree about this idea with a mean score of 2.00. The participants were also asked in statement 12 whether “they feel that VRS usage does not benefit them and does not attract their attention.” It appeared that they had a negative opinion about this statement as well. They also indicated in statement 13 “I feel that VRS should not be used at all for recalling vocabulary”. The learners’ opinion regarding this statement is quite obvious with a mean score of 2.20. The result in statement 4 “I would like to receive more knowledge, experience, and training on mobile phone usage in order to use VRS.” indicated that these things were not needed by the EG learners because the mean score was quite low, 2.35. The EG learners were also asked in statement 2 about whether “Vocabulary Retention usage in remembering words requires more time than the paper-based method.”. With 2.40 mean score it seemed that they were negative about it. In addition, their level was also negative in statement 11 about whether “they think that learning by Vocabulary Retention makes the meaning easier to forget than learning by paper-based technique” (M=2.40) See table 14.

Table 14

EG Negative Statements regarding VRS

	statement	Mean Score	SD	Level
6.	I hate using VRS in university education because I do not know its use.	2.00	.91	positive
12	I feel that VRS usage does not benefit me and does not attract my attention.	2.05	.88	positive
13	I feel that VRS should not be used at all for recalling vocabulary.	2.20	.83	positive

4	I would like to receive more knowledge, experience and training on mobile phone usage in order to use VRS	2.35	.93	positive
2	Using Vocabulary Retention software in remembering words requires more time than the paper-based method.	2.40	.75	positive
11	I think a learning vocabulary through VRS makes it easier to forget than learning them through paper-based technique.	2.40	.88	positive

There were also two close ended questions asking students opinions about advantages and disadvantages of the VRS. Most of the students agreed that the system was so handy and enabled them to study the words at any time and any place. Tables 15 shows the results of statement 16 “What do you like most about the mobile app”, where 30% of the EG students said, Speed, 25%: Content, 15%: Stability and Navigation, 10%: Functionality, 5%: Look and Feel.

Table 15

Frequencies of the EG regarding the Advantages of VRS

	Item 16	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Content	5	25.0	25.0	25.0
	Functionality	2	10.0	10.0	35.0
	Look and Feel	1	5.0	5.0	40.0
	Navigation	3	15.0	15.0	55.0
	Speed	6	30.0	30.0	85.0
	Stability	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

When asked about the disadvantages of VRS in statement 17, “What do you like least about the mobile application?” 65% of the EG group reported that it was the Look of the application, the majority claimed that the theme of VRS was not attractive and only 10% marked Navigation as the least liked feature. The remaining 5% reported Functionality to the

least liked feature. Interestingly, 20% of the EG learners did not mention any disadvantage of the Software and affirmed that they did not encounter any difficulty and it was very useful for them. Finally, the mean score of the last questionnaire item (18) "How would you rate the mobile app" was 3.75 which can be considered that the EG learners favoured the VRS (See Table 16 &17).

Table 16

Frequencies of the EG regarding the Disadvantages of VRS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		4	20.0	20.0	20.0
	Functionality	1	5.0	5.0	25.0
	Look and Feel	13	65.0	65.0	90.0
	Navigation	2	10.0	10.0	100.0
	Total	20	100.0	100.0	

Table 17

VRS Rate of the Experimental Group

	N	Minimum	Maximum	Mean
Rate	20	2.00	5.00	3.7500
Valid N (listwise)	20			

The results of the current study go in line with the study made by Lu (2008), revealing that short-term spaced vocabulary acquiring and retaining via VRS can be more useful than massed long-term spaced vocabulary learning and retention via the paper medium. This may be on the account of the learners' effortless access to the mobile device, which results in their regular practice and repeated exposures to the vocabulary items in a spaced manner on regular intervals. Such a learning method is helpful to reinforce vocabulary learning (Byrnes & Wasik, 2009; Nation & Ming-tzu, 1999). This vision has likewise been reported by the EG learners. Therefore, in order to obtain more evidence about the students' views regarding VRS, the

researcher interviewed the participants from the EG randomly via drawing names out of the hat using Excel to eliminate the risks of external validity. Four categories emerged from the qualitative analysis of the interviews: the time spent on using VRS, the place preferences of VRS, the perceived impact of using VRS and the advantages and disadvantages of VRS.

Time Spent on VRS

Interviewed participants for the time spent on utilizing VRS showed that their employment of the program on the mobile phone raised compared to the start of the experiment. One participant stated:

"Originally I practiced for less than one hour but eventually, I end up practicing for up to two hours in my home everyday." (Hind; interview; 14 March 2017)

Nevertheless, some users also stated that their application of the program lowered at the end of the phase. It was noted that some of the members of the EG practiced the software frequently, but when they reached the end of the semester, their utilization reduced owing to the final exams of the first semester. One participant indicated:

"At first I practiced for 10 to 15 minutes, but then, it grew up to half an hour or one hour, but eventually it lowered again." (Ali; interview; 14 March 2017)

Place of Preferences of VRS

Interviewed participants for the place preferences to practice VRS showed that the software on the mobile phone was regularly practiced in many different locations. One participant stated:

Presently, I had myself more comfortable with the vocabulary that I had to remember than I had done before. Every day when I was on my way from home to the University in the mornings, as well as on my way back to my house, I always use and memorize the words via VRS. This enhanced recycling of the materials has led to improve my vocabulary learning reasonably. (Mohammed; interview; 14 March 2017)

Another participant stated that:

"I utilized VRS when I am on the bus." (Hind; interview; 14 March 2017)

Perceived Positive Impact of Using VRS

One of the interviewed participants for the perceived positive impact of using VRS for English vocabulary acquiring and remembering indicated:

I believe it's useful for learning English. It's an efficient method to study more vocabulary. Reasonably we don't have the attitude to take the vocabulary booklet with us anywhere we go, but we take our VRS wherever we go. We can use the short free time we have when we are waiting for the bus or when we are having a break between lectures. (Mona; interview; 14 March 2017)

Another participant stated:

"Studying vocabulary on paper is dull for me. On the contrary, studying with VRS is more practical and enjoyable for me as it is on demand all the time."
(Mohammed; interview; 14 March 2017)

Advantages and Disadvantages of VRS

Because the interview was semi-structured, some of the learners remarked interesting advantages and disadvantages about VRS, one stated:

The principal difficulty of vocabulary recalling, in my point of view, is whether we could learn and retain the words immediately and continuously. If we can hold on retaining words this way everyday and make it a habit, we can obtain a lot. (Ali; interview; 14 March 2017)

Another interesting thing stated by one of the participants of the EG group:

The push notification sent by the researcher at regular intervals can warn me in case I did not remember to check the words when there are too many things needed to deal with. (Mona; interview; 14 March 2017)

Besides, VRS enables students to retain vocabulary in a motivated way. When vocabulary push notification was received by the learners during the evenings regularly, they were reminded to pay their attention to the words they are required to work on. To a certain

degree, VRS push notification through this period of time became a warning for them to focus on daily vocabulary tasks. This could drag more attention to a motivating influence, which can end up in encouraging them to form the attitude of autonomous learning.

It is effective and beneficial. Yes, it is a dynamic idea since in this way we can retain vocabulary frequently and efficiently. It personally pushes me to retain English vocabulary in a satisfying way. (Mohammed; interview; 14 March 2017)

I reckon it's a good way as the push notification every day will inform me to focus on the task if no one alerts me to do that. (Mona; interview; 14 March 2017)

Moreover, it becomes more effective for a student to remember target words within a given time. As the learners are shown a frequent number of words every day, a tremendous learning task has been broken down into various mini-tasks, which makes it psychologically less challenging to learn and retain them. One of the learners stated the following comment:

Expanding one's vocabulary like the paper medium is a long and overwhelming process to achieve. Yet, when the vocabulary words are divided into everyday mini-tasks as in VRS, it is handy for me to accomplish words. (Hind; interview; 14 March 2017)

While benefits of learning with VRS are evident, there were unfortunately as well some disadvantages, which are rooted in the use of the modern technology. When learners started the second phase of the research (VRS phase), some of the EG did not depend on VRS mainly but endeavoured to utilize other means for the simplification of their learning. The following two comments will illustrate how one student in the EG group resisted this modern technology:

Whenever I use VRS, I retain vocabulary with a different method besides using VRS. I copy the difficult words on a small book. In this way, I could store all those difficult words in the book. For me, this mixed way of learning was most efficient. (Sara; interview; 14 March 2017)

In my point of view, I believe retaining words on the small size mobile screen is not sufficient at all. I myself recommend for writing down the words on a specified booklet which would maintain a history of all the vocabulary I need to learn and retain. It's a more comfortable and good policy to revise the words I've acquired before. (Hussien; interview; 14 March 2017)

Discussion

The principal aim of this study was to explore the impact of mobile phone SMS and VRS on the improvement and retention of vocabulary items. In this regard, three independent t-tests were conducted to answer the first second and second questions of this research. The outcomes indicated that there was a significant difference between the means of the experimental and control groups. Accordingly, it can be concluded that utilizing short message service and VRS had a significant influence on vocabulary learning and recalling of Omar Al-Mukhtar University students, Libya. In order to probe the third and the forth question, one preferential and one attitudinal questionnaire was administered. The results revealed that there was no notable difference between the experimental and control group in terms of perceptual modality and the experimental group had positive attitudes towards the employment of VRS on vocabulary retention and improvement of the students.

These findings ago in line with some of the empirical studies carried out and presented earlier in the literature review. Abbasi and Hashemi (2013) conducted a study which adopted mobile phones to teach English at an Iranian high school, opposing paper-based with SMS-based learning activities. The outcomes showed that students who acquired vocabulary via SMS exercises remembered over twice the number of vocabulary words as the students who learned through the paper-based. The conclusion was that the SMS-based activities had been more useful as they were sent as push media, rather than passive paper-based. Furthermore, there was no notable difference between male and female intermediate EFL learners in vocabulary retention while utilizing mobile phones.

All in all, adult students generally revealed a positive response to the innovative mode of vocabulary improving and remembering. The following factors may explain further the benefits of VRS and mobile learning in general. Firstly, it is the prevalence of mobile phone usage that

paves the way for learning via mobile phone. Because of the involvement of mobile phones in daily life, these students eagerly adapted to acquiring new words via SMS and VRS. Secondly, the intrinsic characteristics of vocabulary learning assisted by mobile phones resulted in the endurance for adult learners' vocabulary learning. Mobile phone technology has the ability to enhance students' efficiency, remarkably in a condition where self-directed students lack the capacity to learn thoroughly in an autonomous habit (Zhang, Song and Burston, 2011).

It is precisely the problem for the EFL adult students in the Libyan context. These students have a very limited time for learning new vocabulary. Therefore, they need to dedicate most of their time to autonomous and self-directed learning due to the fact that those learners only use or study English inside the classroom. Moreover, because of their busy timetable, they find it challenging to maintain the self-regulated autonomous learning. Consequently, mobile phones elaborate as an efficient media to ease vocabulary learning on a regular basis.

The immediacy and mobility of mobile phones can as well explain the positive response of these adult students. These benefits provide students comfortable access and frequent exposure to the learning materials. According to Hulstijn & Laufer (2001), such frequent exposure to target vocabulary "enhances the information processing activities, makes the activation and recognition automatic, and leads to greater retention" (p.12). Besides, students in this study prefer the mobile assisted vocabulary learning (MALL) due to the suitability facilitated by the accessibility and the mobility. Due to the busy schedule of the students, they had a major problem in studying the lengthy paper vocabulary lists. However, vocabulary items sent by mobile phones are easy to manage and more appealing to the students. Now with VRS and SMS, they can conveniently study new words anytime anywhere. Such portable and easily acceptable learning has more constructive effect on memory and learning.

Basoglu and Akdemir (2010) arranged a similar program to VRS and got similar results in a public university in Turkey by sending vocabulary via software application called ECTACO in a scheduled pattern of delivery to sixty students in a compulsory preparatory program. Results indicated that using mobile phones as a vocabulary learning tool was more effective than the traditional vocabulary learning tools. However, the present study using VRS proved that using mobile phones software had a significant effect on not only vocabulary learning but also on vocabulary retention of Libyan elementary EFL learners; likewise there was not a significant difference in the perceptual modality between the CG and EG learners in the vocabulary learning and retention, while using mobile phones and paper-based techniques.

Retention and learning of words rely mainly on representing, repeating, and re-cycling of the vocabulary by the educator and by the same token on re-noticing of them by the student. For the sake of a significant and meaningful recycling, a large number of words have to be met over and over again which requires a tremendous amount of time and effort. For instance, 55 hours of exposure to the target language throughout one semester in Omar Al-Mukhtar University was very limited and inadequate for re-cycling. Hence, mobile phones can be adopted as an active medium for re-cycling a great amount of materials in a very short period of time.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The main purpose of this study was to investigate the effectiveness of VRS and SMS to retain English as a foreign language (EFL) vocabulary in the Libyan context compared to the traditional way of retaining them. The study also investigated if perceptual modality played a principle role in retaining words between the EG and CG. This chapter presents the summary of the findings, recommendations followed by suggestions for further studies.

Summary of the Findings

This research was designed mainly to discover if SMS or VRS can have a notable influence on vocabulary retention when learning English as a foreign language. Forty Libyan students studying at Omar Al-Mukhtar University participated in this study. Based on the analysis of the collected data, the following findings relevant to related research questions were revealed:

First, according to the first and the second research questions "Does the intervention of mobile phone SMS technique in EFL classroom help intermediate EFL learners to recall vocabulary items better" and "Does VRS software employed in EFL classroom help intermediate EFL learners to improve and recall vocabulary items better", the findings showed that retaining vocabulary via mobile phone technology (VRS and SMS) significantly developed the experimental group students' vocabulary retention ability more than the control group students. Similarly, the result of this study revealed that retaining vocabulary via VRS can be more useful to other mobile phone learning methods and can be superior to SMS-based technique. Second,

related to the third research question the study discovered that perceptual modality did not play a dominant role in learning and remembering words between the two groups. Finally, the results related to the forth research question with respect to the EG opinions on the use of VRS, revealed that it was an effective pedagogical tool because of its immediacy, spacing effect, legibility, novelty and portability. The results of the second part of the forth research question based on participants' interviews revealed that VRS helped them retain English words in a convenient manner, motivated them to retain more words and fostered vocabulary learning.

Furthermore, vocabulary learning via VRS provides students with frequent exposure to target a word, which is considered conducive to learning new vocabulary items and the immediate vocabulary push notification in VRS, can act as an effective reminder to adult learners to exercise autonomous vocabulary retention. The results and discussions presented in this research, hopefully, will contribute insights into MALL and for those who are willing to integrate mobile technologies into language learning and teaching.

Practical Implications for Education

The findings of this research could have significant implications for English vocabulary retention especially for vocabulary learning and retention via mobile phones. English vocabulary software executed on mobile phones can be applied as an extracurricular exercise for undergraduate students in teaching English vocabulary. Learners can have a chance to study anytime and everywhere as they take and use their mobile phones almost all the time. This pleasant experience can inspire fun-learning for undergraduate students and even beyond undergraduate level. Findings also indicate that mobile devices present enormous possibilities for learning, particularly outside the class because they are accessible all the time.

Another implication of this study is that the deficiency of English vocabulary softwares running on mobile phones, SMS can also be utilized to teach English vocabulary as it also developed the vocabulary gain of experimental group in the first phase of the study. Nevertheless, it should be noted that utilizing VRS is more efficient than using SMS in English vocabulary learning and retaining. Accordingly, SMS should be regarded as a second option in the deficiency of VRS or any other mobile software that uses the same method of vocabulary learning and retention.

Another notable implication of this research study is that regardless of the tool that is used in vocabulary learning, both groups achieved better in the first and the second post-tests. Therefore, this research has a significant implication for language educators. They ought to pay more attention to vocabulary instruction in and out of the classroom particularly through the integration of mobile technology. Moreover, they should exploit every chance and tool to motivate and help learners to learn and improve their vocabulary. Wilkins (1972) states that ‘‘There is not much value in being able to produce grammatical sentences if one has not got the vocabulary that is needed to convey what one wishes to say” (p.97). By the same token, the findings of the current research notify not only the educators and teachers, but also the software designers of relevant pedagogical applications of mobile technologies.

Recommendations for Further Research

To face the challenges of the 21st century, a technological revolution is needed for educational establishments. Compared to other developing countries, mobile technologies as well as other technological devices need to be improved very fast in Libya (Skrondal and Rabe-Hesketh, 2003). Libyan students either at university or at school not only have the most up-to-date mobile phones, but they are also expert in using them. This situation encourages teachers

and software developers to pay more attention to MALL via conducting several studies regarding its use and effectiveness. Based on the findings and the conclusions of the study the following recommendations for further research can be made:

1. Only text-based vocabulary retaining program (VRS) was used in this study. It is therefore recommended that further studies should examine the effects of using vocabulary learning and retaining software which incorporates visually engaging screens and multimedia features such as sounds images and videos.

2. This study used a class of small sample size due to the restricted number of the first year English students at Omar Al-Muhtar University and all the students in this investigation majored in English. It would be more motivating to examine a bigger sample size in the same university or in any other city. Whether the same results would be accomplished with students from other backgrounds majoring in other disciplines other than English needs to be investigated.

3. Further experimental studies are required to precisely evaluate the students' long-term experience towards this technology since the short-term responses may influence the objectivity of the students' attitude. The EG responded very positively to the new medium (VRS) of vocabulary learning and retention which might be partly because the participants for the first time used their mobile phones for pedagogical purposes.

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APPENDICES

Appendix A

Pre-test adopted from Test Your Vocabulary elementary level (Watcyn-Jones, 2000), pages 10&18.

2 Synonyms – adjectives

Write down a synonym for each of the words on the left. Choose from the ones on the right. Number 1 has been done for you.

1 glad	happy	silent
2 nice	.....	happy
3 wonderful	.....	amusing
4 awful	.....	boring
5 strange	.....	rude
6 very big	.....	inexpensive
7 optimistic	.....	good-looking
8 funny	.....	terrible
9 handsome	.....	marvellous
10 dull	.....	hopeful
11 impolite	.....	simple
12 intelligent	.....	huge
13 quiet	.....	peculiar
14 easy	.....	clever
15 cheap	.....	pleasant

9 Synonyms – verbs

Write down a synonym for each of the words on the left. Choose from the ones on the right. Number 1 has been done for you.

1 talk	speak	depart
2 love	.....	help
3 hate	.....	adore
4 fall	.....	mend
5 phone	.....	receive
6 swim	.....	allow
7 leave	.....	comprehend
8 let	.....	ring
9 ask	.....	loathe
10 cry	.....	require
11 assist	.....	weep
12 get	.....	speak
13 need	.....	inquire
14 understand	.....	stumble
15 repair	.....	bathe

Appendix B

Perceptual Modality Preference Survey

Identify your personal

Learning Style

by completing a simple survey

Copyrighted by Clarence E. Cherry, Jr., 1981, 1997, 2002.

Introduction to Learning Styles and the PMPS

The term “Learning Style” is employed in different methods in the learning and teaching process. Regularly, it relates to the singularity of every learner. Personal variations might incorporate personality, mental processing, determination, perspective, sensory intake processes, or some complicated mixture of these and other variations.

The outset of learning is getting new information; consequently, sensory intake deserves particular consideration. Gauging the seven parts of the perceptual modality of learning styles can provide learners precious data about their sensory processes. The seven perceptual learning styles are print, aural, interactive, visual, haptic, kinaesthetic, and olfactory. This questionnaire will assist you to recognise and rank your seven perceptual learning styles. The outcomes of this questionnaire can aid you to shape your future learning experiences.

This is not a test; there are no right or wrong answers. You will be answering forty-two statements regarding how you best learn. When answering, consider past learning progress and your feelings about how you learn. The response choices are: always, usually, seldom, or never. An always response means that the statement is a strong representation of your learning style preference. If a statement is a good way for you to learn, but not your most preferred, you should select usually. Seldom is the response for statements that reflect a way you can learn, but you would prefer other learning methods. A never response is appropriate for statements that you reject as a way for you to learn.

For best outcomes, it is of extreme importance that you answer all forty-two statements in the form shown. Do not ignore or jump responses. Best of luck and I hope you enjoy the experience!

Statement	مطلقًا never	نادرًا seldom	عادة usually	دائمًا always
1. I can learn better by reading than by listening.				
2. I can learn better by listening than by talking with others.				
3. I can learn better by talking with others than by looking at things like movies and slides.				
4. I can learn better by looking at things like movies and slides than by touching or holding objects.				
5. I can learn better by touching or holding objects than by physically participating in activities such as sports or games.				
6. I can learn better by physically participating in activities such as sports or games than by smelling things.				
7. I can learn better by smelling things than by reading.				
8. I can learn better by reading than by talking with others.				
9. I can learn better by talking with others than by touching or holding objects.				
10. I can learn better by touching or holding objects than by smelling things.				
11. I can learn better by smelling things than by listening.				
12. I can learn better by listening than by looking at things like movies and slides.				

Statement	مطلقًا never	نادرًا seldom	عادة usually	دائمًا always
13. I can learn better by looking at things like movies and slides than by physically participating in activities such as sports and games.				
14. I can learn better by physically participating in activities such as sports and games than by reading.				
15. I can learn better by reading than by looking at things like movies and slides.				
16. I can learn better by looking at things like movies and slides than by smelling things.				
17. I can learn better by smelling things than by talking with others.				
18. I can learn better by talking with others than by physically participating in activities such as sports and games.				
19. I can learn better by physically participating in activities such as sports and games than by listening.				
20. I can learn better by listening than by touching or holding objects.				
21. I can learn better by touching or holding objects than by reading.				
22. I can learn better by reading than by smelling things.				
23. I can learn better by smelling things than by physically participating in activities such as sports and games.				

Statement	مطلقًا never	نادرًا seldom	عادة usually	دائمًا always
24. I can learn better by physically participating in activities such as sports and games than by touching or holding objects.				
25. I can learn better by touching or holding objects than by looking at things like movies and slides.				
26. I can learn better by looking at things like movies and slides than by talking with others.				
27. I can learn better by talking with others than by listening.				
28. I can learn better by listening than by reading.				
29. I can learn better by reading than by physically participating in activities such as sports and games.				
30. I can learn better by physically participating in activities such as sports and games than by looking at things like movies and slides.				
31. I can learn better by looking at things like movies and slides than by listening.				
32. I can learn better by listening than by smelling things.				
33. I can learn better by smelling things than by touching or holding objects.				
34. I can learn better by touching or holding objects than by talking with others.				

Statement	مطلقًا never	نادرًا seldom	عادة usually	دائمًا always
35. I can learn better by talking with others than by reading.				
36. I can learn better by reading than by touching or holding objects.				
37. I can learn better by touching or holding objects than by listening.				
38. I can learn better by listening than by physically participating in activities such as sports and games.				
39. I can learn better by physically participating in activities such as sports and games than by talking with others.				
40. I can learn better by talking with others than by smelling things.				
41. I can learn better by smelling things than by looking at things like movies and slides.				
42. I can learn better by looking at things like movies and slides than by reading.				

Learning styles Survey

أستبانة حول أساليب التعلم

الكلية:..... القسم: .....

الفرقة:..... النوع: .....

العبارة	دائمًا always	عادة usually	نادرًا seldom	مطلقًا never
1. استطيع التعلم عن طريق القراءة أفضل من التعلم عن طريق الاستماع				
2. **استطيع التعلم عن طريق الاستماع أفضل من التعلم عن طريق التحدث مع الآخرين**				
3. **استطيع التعلم عن طريق التحدث مع الآخرين أفضل من التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية**				
4. **استطيع التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية أفضل من التعلم عن طريق مسك أو لمس الأشياء**				
5. **استطيع التعلم عن طريق مسك أو لمس الأشياء أفضل من التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات**				
6. **استطيع التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات أفضل من التعلم عن طريق شم الأشياء**				
7. **استطيع التعلم عن طريق شم الأشياء أفضل من التعلم عن طريق القراءة**				
8. **استطيع التعلم عن طريق القراءة أفضل من التعلم عن طريق التحدث مع الآخرين**				
9. **استطيع التعلم عن طريق التحدث مع الآخرين أفضل من التعلم عن طريق مسك أو لمس الأشياء**				
10. **استطيع التعلم عن طريق مسك أو لمس الأشياء أفضل من التعلم عن طريق شم الأشياء**				
11. **استطيع التعلم عن طريق شم الأشياء أفضل من التعلم عن طريق الاستماع**				
12. **استطيع التعلم عن طريق الاستماع أفضل من التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية**				
13. **استطيع التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية أفضل من التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات**				
14. **استطيع التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات أفضل من التعلم عن طريق القراءة**				
15. **استطيع التعلم عن طريق القراءة أفضل من التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية**				
16. **استطيع التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية أفضل من التعلم عن طريق شم الأشياء**				
17. **استطيع التعلم عن طريق شم الأشياء أفضل من التعلم عن طريق التحدث مع الأخرين**				
18. **استطيع التعلم عن طريق التحدث مع الأخرين أفضل من التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات**				
19. **استطيع التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات أفضل من التعلم عن طريق الاستماع**				
20. **استطيع التعلم عن طريق الاستماع أفضل من التعلم عن طريق مسك أو لمس الأشياء**				

العبارة	دائمًا always	عادة usually	نادرًا seldom	مطلقًا never
21. استطيع التعلم عن طريق مسك أو لمس الأشياء أفضل من التعلم عن طريق القراءة				
22. استطيع التعلم عن طريق القراءة أفضل من التعلم عن طريق شم الأشياء				
23. استطيع التعلم عن طريق شم الأشياء أفضل من التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات				
24. استطيع التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات أفضل من التعلم عن طريق مسك أو لمس الأشياء				
25. استطيع التعلم عن طريق مسك أو لمس الأشياء أفضل من التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية				
26. استطيع التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية أفضل من التعلم عن طريق التحدث مع الأخرين				
27. استطيع التعلم عن طريق التحدث مع الأخرين أفضل من التعلم عن طريق الاستماع				
28. استطيع التعلم عن طريق الاستماع أفضل من التعلم عن طريق القراءة				
29. استطيع التعلم عن طريق القراءة أفضل من التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات				
30. استطيع التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات أفضل من التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية				
31. استطيع التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية أفضل من التعلم عن طريق الاستماع				
32. استطيع التعلم عن طريق الاستماع أفضل من التعلم عن طريق شم الأشياء				
33. استطيع التعلم عن طريق شم الأشياء أفضل من التعلم عن طريق مسك أو لمس الأشياء				
34. استطيع التعلم عن طريق مسك أو لمس الأشياء أفضل من التعلم عن طريق التحدث مع الأخرين				
35. استطيع التعلم عن طريق التحدث مع الأخرين أفضل من التعلم عن طريق القراءة				
36. استطيع التعلم عن طريق القراءة أفضل من التعلم عن طريق مسك أو لمس الأشياء				
37. استطيع التعلم عن طريق مسك أو لمس الأشياء أفضل من التعلم عن طريق الاستماع				
38. استطيع التعلم عن طريق الاستماع أفضل من التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات				
39. استطيع التعلم عن طريق المشاركة البدنية في الأنشطة المختلفة كالرياضة والمباريات أفضل من التعلم عن طريق التحدث مع الأخرين				
40. استطيع التعلم عن طريق التحدث مع الأخرين أفضل من التعلم عن طريق شم الأشياء				
41. استطيع التعلم عن طريق شم الأشياء أفضل من التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية				
42. استطيع التعلم عن طريق مشاهدة الأفلام والشرائح التعليمية أفضل من التعلم عن طريق القراءة				

Appendix C

Two post-tests KET exam for the SMS & VRS phases.

TARGET KET for schools

Vocabulary Worksheet 3

SPORTS, ACTION VERBS

Run, throw, catch!

1 Match the actions to the verbs.

catch hit jump play throw win

0 *catch*

1 _____

2 _____

3 _____

4 _____

5 _____

2 Complete the dialogues with verbs from Activity 1.

1 **A:** Simon, you're tall and you can **(1)** _____ really high, can't you?
B: I suppose so. Why?
A: Do you want to **(2)** _____ basketball with my team tomorrow night?

2 **A:** I don't understand cricket. What do you have to do to **(3)** _____ the game?
B: You have to **(4)** _____ the ball as far away as possible, then score lots of 'runs'. The team with the most runs wins.
A: Is that it?
B: Well, if you **(5)** _____ the ball before it touches the ground, that person is out. And of course, if someone puts their leg before the wicket...
A: Stop! I've decided I don't want to know about the rules after all.

3 **A:** Did you play netball at school?
B: Yes, and I was terrible! I tried to **(6)** _____ the ball to my teammates, but it would never go where I wanted!

3 Think of sports that match these action verbs. Write down as many sports as you can think of. Some sports may match more than one verb.

basketball

1 throw

netball *volleyball*

2 kick

3 hit

4 Write a description of how you play a sport. Use the verbs from Activities 1–3.

This is a team sport.
You kick a ball.
To win, you need to score the most goals.

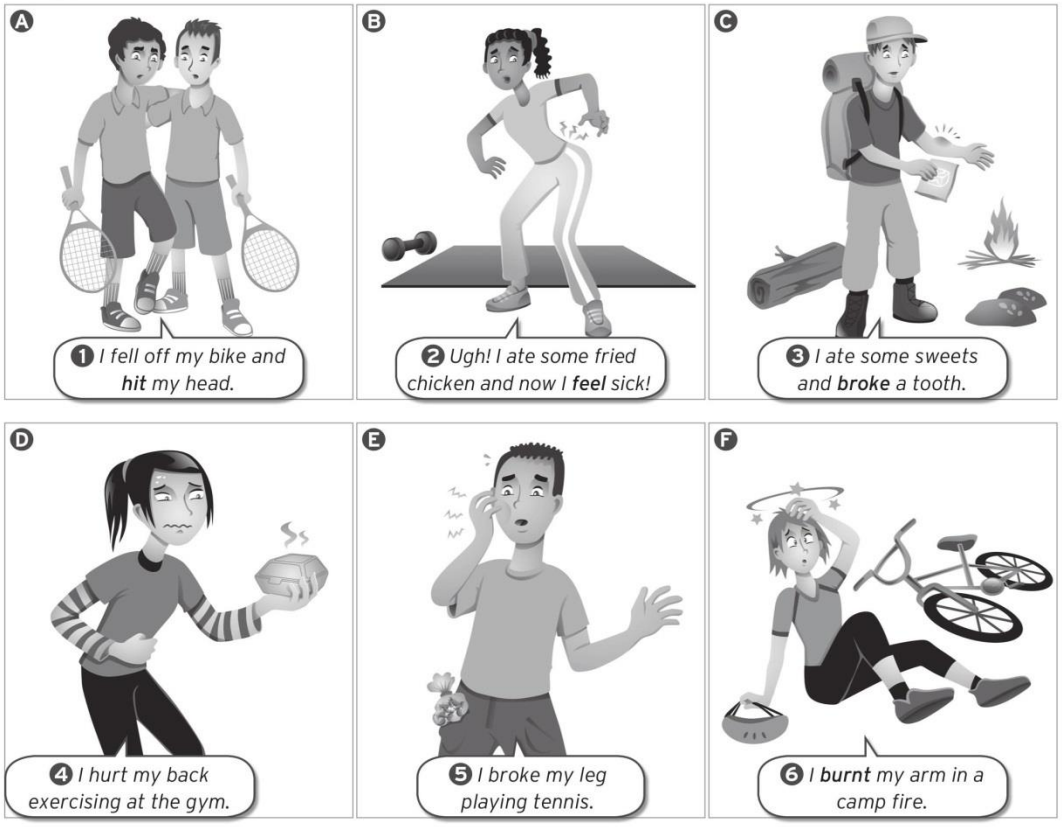
PHOTOCOPIABLE Target KET © Richmond Publishing, 2010

TARGET KET for schools

Vocabulary Worksheet 8

ACCIDENT VERBS

What's wrong?



1 **Match the speech bubbles 1–6 with the pictures A–F.**

1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___

2 **Complete the dialogues below. Use the words in bold from Activity 1.**

1 **A** What's wrong?
B It's my finger. I _____ it when I was boiling some water.

2 **A** Are you OK?
B Not really. I ate some old bread and now I _____ really sick.

3 **A** What's the matter?
B I _____ my head on a door. It hurts a lot!

4 **A** What happened to your arm?
B I fell off my bike and _____ it. I can't do any sport for six more weeks.

3 **Think of some advice you could offer the people in Activities 1 and 2. Write it down.**

If you feel like this you should try to drink some cold milk.

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Appendix D

VRS Experimental Group Questionnaire

Students' opinions on using Vocabulary Retention software

Dear student,

This questionnaire is designed to gather your opinions regarding the use of Vocabulary Retention software (VRS). It takes about 15-20 minutes to complete this questionnaire. This is not a test. The information will be used only for the purposes of the research. It is important to answer each question as honestly as possible. There are no right or wrong answers. Please state your opinion frankly about the statements by choosing from the options under the statement ranging from "Strongly Agree to Strongly Disagree". The results of this questionnaire will only be used for research purposes and will not be publicized.

Thank you very much for your cooperation.

Elmahdi Sanusi Idris

MA student department of ELT

Near East University

You can contact me through the following email if needed: mahdi.elkilani@gmail.com

1. Vocabulary Retention software is a very useful reference tool for learning vocabulary inside and outside the classroom

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

2. Using Vocabulary Retention software in remembering words requires more time than the paper-based method.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

3. Vocabulary Retention Software increased my vocabulary knowledge in a significant way.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

4. I would like to receive more knowledge, experience and training on mobile phone usage in order to use VRS.

Strongly agree

Agree

Unsure

Disagree

Strongly Disagree

5. I consider the availability of the modern mobile phone applications for the students to use for educational purposes is a must.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

6. I hate using VRS in university education because I do not know how it is used.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

7. The practice of using VRS is an easy process.

Strongly agree

Agree

Unsure

Disagree

Strongly Disagree

8. I prefer using VRS because it is possible to use it anywhere and anytime.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

9. I feel comfortable when I use VRS because it saves time and effort.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

10. I like to use VRS for its advantages such as regular push notification

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

11. I think learning word items through VRS makes them easier to forget than learning them through paper-based technique.

Strongly agree

Agree

Unsure

Disagree

Strongly Disagree

12. I feel that VRS does not help me and does not attract my attention.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

13. I feel that VRS should not be used at all for recalling vocabulary.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

14. I encourage my classmates and friends to download VRS for its effectiveness in recalling words.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

15. I think that VRS will play an important role in e-learning in the future.

Strongly agree

Agree

Unsure

Disagree

Strongly disagree

16. Which of the issues below was the biggest problem during your experience with the VRS?

I experienced bugs

The app was missing features I needed

The app was confusing to use

The app was visually unappealing

The app crashed

Other (please specify) _____

17. Please describe the problem you encountered in more detail.

18. What did you like most about the VRS?

Navigation

Functionality

Look and feel

Speed

Stability

Content

Other (please specify) _____

19. What did you like least about the mobile app?

Navigation

Functionality

Look and feel

Speed

Stability

Content

Other (please specify)

20. Do you have anything else you would like to share about the VRS?

21. How would you rate the mobile app?

استبيان عن آراء الطلاب حول استخدام برنامج **VRS Vocabulary Retention Software**

عزيزي الطالب،

تم تصميم هذا الاستبيان لجمع آرائكم بشأن استخدام برنامج **(VRS) .** هذا الإستبيان يستغرق مابين **20-15** دقيقة لإستكماله .وهو ليس إختبارا وإن كافة المعلومات التي سيتم الحصول عليها سوف تستخدم لغرض البحث العلمي فقط. ومن المهم الإجابة على كل سؤال بكل مصداقية. علما بأن لا توجد إجابة صحيحة أو خاطئة.

الرجاء إبداء الرأي بصراحة في المكان المخصص له وذلك باختيار الإجابة من بين الخمس الإختيارات المعطاة.

(أوافق بشدة- أوافق- غير متيقن- لاأوافق- لا أوافق بشدة)

سيتم استخدام نتائج هذاالاستبيان لغرض البحث العلمي فقط ولن يتم نشرها.

شاكرين حسن تعاونكم.

Elmahdi Sanusi Idris

MA student department of ELT

Near East University

You can contact me through the following email if needed: mahdi.elkilani@gmail.com

1.(VRS) هو أداة مفيدة جدا لتعلم المفردات داخل وخارج الفصل الدراسي.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

2. استخدام برنامج **VRS** لتذكر الكلمات يتطلب وقتا أكثر من طريقة الورقية.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

3. يعمل برنامج **VRS**علي تطور المفردات بصورة ملحوظه.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

4. أود الحصول على مزيد من المعرفة والخبرة والتدريب عن استخدام الهاتف المحمول من أجل استخدام برنامج **VRS .**

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

5. أري توفير تطبيقات الهاتف المحمول الحديثة للطلاب أمر لابد منه لاستخدامه في ا لأغراض التعليمية .

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

6. لاأحب استخدام برنامج **(VRS)**في التعليم الجامعي لأنني لا أعرف كيفية استخدامه.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

7. ممارسة استخدام البرنامج عملية سهلة.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

8 أفضل استخدام البرنامج لأنه من الممكن استخدامه في أي مكان وزمان.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

9. أشعر بالراحة عند استخدام البرنامج لأنه يوفر الوقت والجهد.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

10.أحب استخدام البرنامج لمزاياه المتنوعة مثل الإشعارات المنتظمة.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشد

11 أعتقد أن تعلم الكلمات من خلال هذا البرنامج يجعل عمليه نسيانها أسهل من تعلمها باستخدام الطريقه الورقيه.

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

12. لا أعتقد بأن البرنامج يقدم لي المساعدة ويجذب انتباهي.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

13. أعتقد أن برنامج **VRS** لا ينبغي أن يستخدم فقط في المساعدة علي تذكر المفردات.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

14. أحفز وأشجع زملائي وأصدقائي علي تحميل برنامج**VRS** وذلك لفعاليته في المساعدة علي تذكر الكلمات أو المفردات.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

15 أعتقدأن برنامج **VRS**سيلعب دورا مهما في طرق التعلم الإلكتروني في المستقبل.

أوافق بشدة

اوافق

غير متأكد

لا أوافق

لا أوافق بشدة

16. أي من هذه الأعطال واجهتك خلال تجربتك لإستخدام برنامج **VRS**؟

لقد واجهت مشاكل فنية فى التطبيق

البرنامج يفتقد للعديد من المميزات

البرنامج كان مربك الاستخدام

البرنامج كان غير جذاب بصريا

البرنامج توقف عن العمل

غير ذلك (يرجى التحديد)_____

17. يرجى وصف المشكلة التي واجهتها بمزيد من التفاصيل.

18. ماهي اكثر شي احببته في **VRS** ؟

التنقل

وظائف البرنامج

السرعة

استقرار البرنامج

المحتوى

غير ذلك (يرجى التحديد) _____

19. ما هوا الشي الذي لم يعجبك في **VRS**؟

التنقل

وظائف البرنامج

السرعة

استقرار البرنامج

المحتوى

غير ذلك (يرجى التحديد)_____

20 أي شيء آخر تود اصلاعي عليه حول البرنامج؟

.هل لديك

21. من خمس نجوم كم تقيمك لل **VRS**؟

Appendix E

Interview Questions

1. For how long do you use VRS?
2. Where do you mostly prefer to use VRS?
3. Do you think using VRS is useful for vocabulary recalling?
4. What are the advantages and disadvantages of VRS?

Appendix F

Consent Form for Participant

Graduate School of Educational Sciences

Integrating Mobile Phones to Enhance Students' Vocabulary Retention in EFL Classroom

Consent Form for Participation

I…… voluntarily accept to take a part in this research study. I have had the aim and essence of the study demonstrated to me in writing and I have had the chance to ask questions about the research. And I comprehend that I may ask additional inquiries at any time.

I also understand that I am capable of withdrawing from the study at any time, or to refuse to answer any particular question in the study. I accept to give information to the researcher under the restraints of confidentiality. By the same token, I understand that in any report on the outcomes of this research my identity will be unknown. This will be done by shifting my name and hiding any parts of my interview which may expose my identity or the identity of people I mention Participant.

Signature: _____

Date: _____.

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Appendix G

OMAR AL-MUKHTAR UNIVERSITY
Faculty of arts and sciences
English Department

جامعة عمر المختار
كلية الاداب والعلوم
قسم اللغة الانجليزية

Thursday, April 20, 2017 Reference number:.....

To Whom It May Concern

Subject/Support Letter

Dear Sir/Madam,

This is to certify that **Mr. Elmahdi .S .I Elsanusi**, a master's student at Near East University, has been officially allowed by our department of English to interview selected students of the department, examine students and distribute questionnaires on the students to collect his research data as part of writing his Master's thesis.

If you have any question or query regarding this matter, please feel free to contact me through the following addresses:

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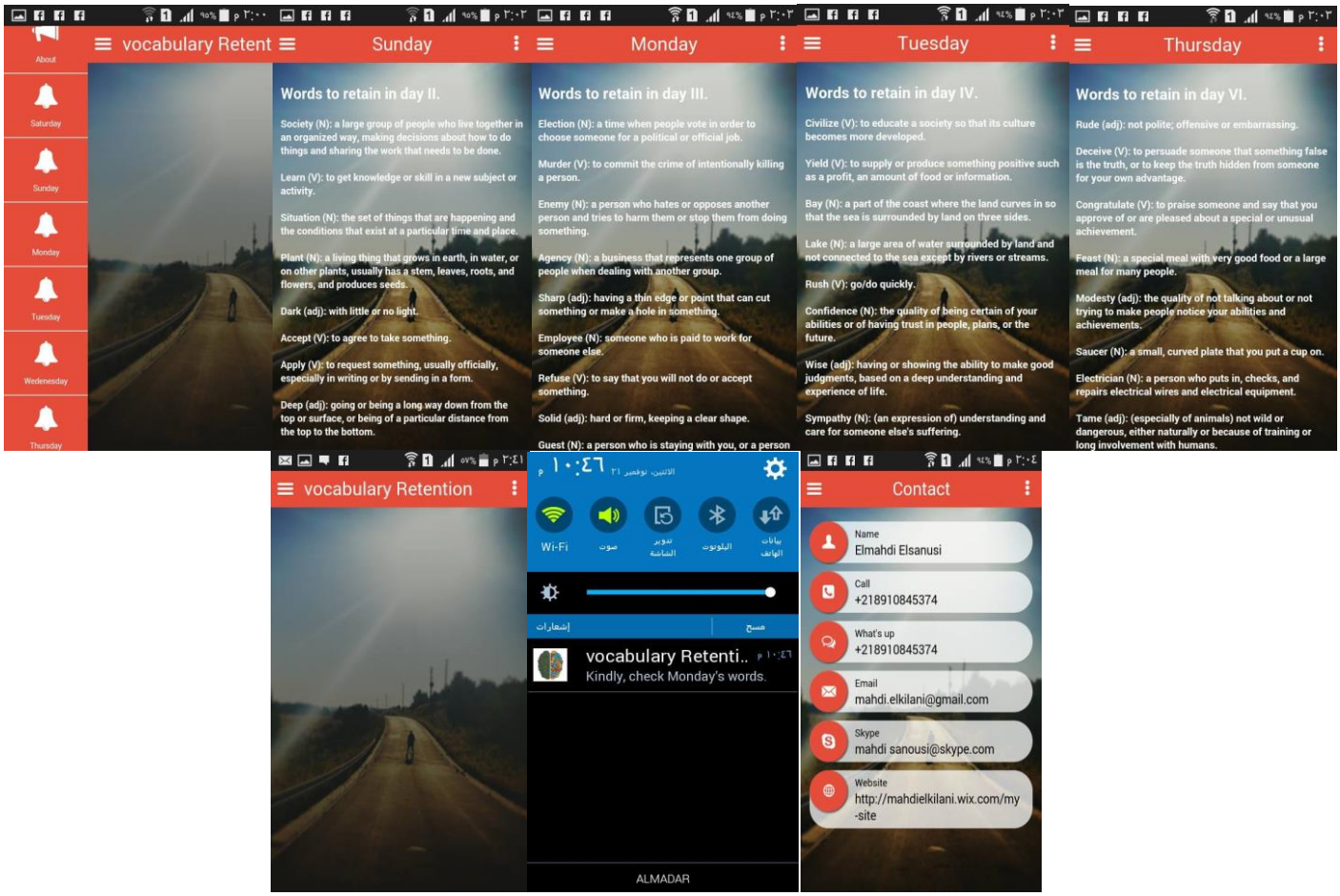
Appendix H

Vocabulary Retention Software

VRS is the first mobile software that enables language learners to retain words an enjoyable stress-free manner. The idea of the application is pretty straightforward just open the app and revise your today's words and after a while you will be able to recall these words without big efforts. In case you forget to reives your words, don't worry; the push notification will always remind you to revise the words. A link to download this application is provided below with some images to show you how the application normally works.

Link: http://d2wuvg8krwnvon.cloudfront.net/appfile/952f6bb24040.apk



Appendix I

The EG students' opinions regarding the use of VRS for vocabulary learning and retention

Descriptive Statistics

	N	Mean	Std. Deviation
Item1	20	3.6500	.67082
Item2	20	2.4000	.75394
Item3	20	3.9500	.68633
Item4	20	2.3500	.93330
Item5	20	3.9500	1.19097
Item6	20	2.0000	.91766
Item7	20	4.0500	.75915
Item8	20	3.8500	.93330
Item9	20	3.8000	.95145
Item10	20	4.1500	.87509
Item11	20	2.4000	.88258
Item12	20	2.0500	.88704
Item13	20	2.2000	.83351
Item14	20	3.8500	.67082
Item15	20	3.5000	.82717
Valid N (listwise)	20		

Advantages of VRS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Content	5	25.0	25.0	25.0
	Functionality	2	10.0	10.0	35.0
	Look and Feel	1	5.0	5.0	40.0
	Navigation	3	15.0	15.0	55.0
	Speed	6	30.0	30.0	85.0
	Stability	3	15.0	15.0	100.0
	Total	20	100.0	100.0	

Disadvantages of VRS

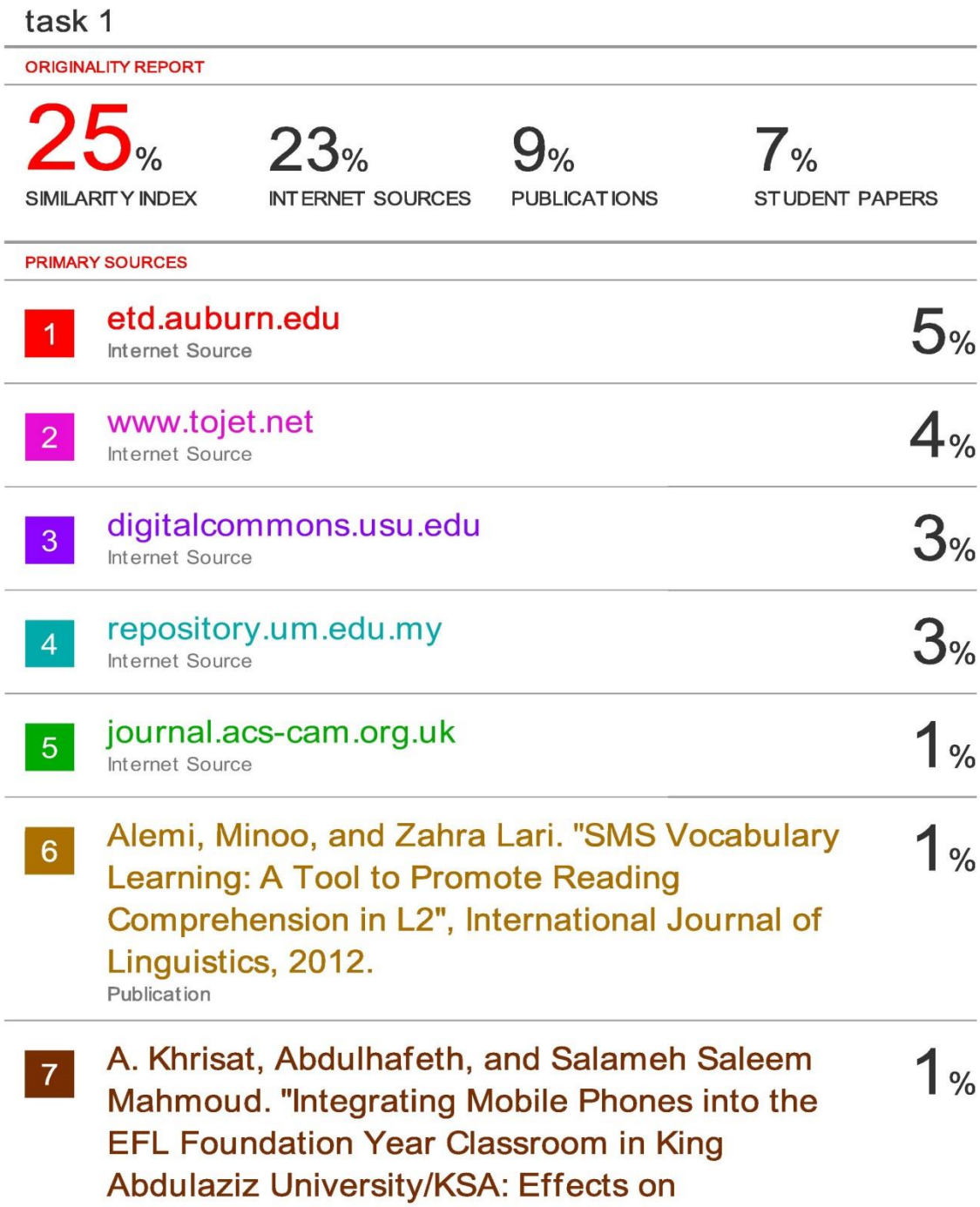
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Content	1	5.0	5.0	5.0
	Functionality	2	10.0	10.0	15.0
	Look and Feel	14	70.0	70.0	85.0
	Navigation	2	10.0	10.0	95.0
	Stability	1	5.0	5.0	100.0
	Total	20	100.0	100.0	

Rate of the software

	N	Minimum	Maximum	Mean
Rate	20	2.00	5.00	3.7500
Valid N (listwise)	20			

Appendix J

The Turnitin Similarity Report



task 1

ORIGINALITY REPORT

25%	23%	9%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	etd.auburn.edu Internet Source	5%
2	www.tojet.net Internet Source	4%
3	digitalcommons.usu.edu Internet Source	3%
4	repository.um.edu.my Internet Source	3%
5	journal.acs-cam.org.uk Internet Source	1%
6	Alemi, Minoo, and Zahra Lari. "SMS Vocabulary Learning: A Tool to Promote Reading Comprehension in L2", International Journal of Linguistics, 2012. Publication	1%
7	A. Khrisat, Abdulhafeth, and Salameh Saleem Mahmoud. "Integrating Mobile Phones into the EFL Foundation Year Classroom in King Abdulaziz University/KSA: Effects on	1%