Global Journal of Foreign Language Teaching

Volume 9, Issue 1, (2019) 051-068

www.gjflt.eu

Using mobile applications to teach vocabulary: Saudi EFL teachers' perceptions

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Suggested Citation:
Al-Johali, K. Y. (2019). Using mobile applications to teach vocabulary: Saudi EFL teachers' perceptions. *Global Journal of Foreign Language Teaching*. *9*(1), 051–068.

Received from August 12, 2018; revised from October 12, 2018; accepted from January 2, 2019.
Selection and peer review under responsibility of Assoc. Prof. Dr. Jesus Laborda Garcia, Alcala University, Spain.

Abstract

This paper aimed at investigating the potential effectiveness of using mobile applications to teach vocabulary in public schools in Saudi Arabia. It was carried out in Sabia, Jazan, Saudi Arabia in the academic year 2018. It is a descriptive survey paper done to survey EFL teachers' perspectives about using vocabulary m-applications. The sample consisted of 113 teachers. This paper depended on one instrument to collect data which is a 25-item, 5-category and closed-answer questionnaire. It addressed five questions concerning usability, motivation, collaboration, vocabulary learning and mobile-based vocabulary instruction (MBVI) versus traditional vocabulary instruction (TVI). The findings revealed that vocabulary m-applications is of great usefulness to vocabulary instruction and learning in general. The teachers considered m-applications simple and usable and preferred MBVI to TVI because of its capabilities and acceptance among students. To effectively use vocabulary m-applications, students should be well trained and classrooms should be more mobile-oriented. Also, teachers must be technically and pedagogically competent.

Keywords: Mobile applications, MALL, vocabulary learning, motivation, collaboration, mobile-based vocabulary instruction.

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1. Introduction

By the beginning of the third millennium (2000s), mobile phones began to intrude our lives and got developed acceleratingly until getting to the era of smartphones. Nowadays, it is almost impossible to see a person without a smartphone in his hands gazing at it motionlessly. Smartphones developed as small mobile computers. Many people are getting to depend increasingly on their smartphones to do many things such as communication, working and learning. Smartphones are a developing technology that can provide plenty of services and emerging applications for users. There are basic services such as dialling and SMS, and innovative services such as learning applications that can be found and installed online from the market like Google Play and Apple Store. In addition, one can use smart mobiles to edit, store, send, share, play media files, access the web and even to learn.

Using mobiles in education is increasing in order to facilitate learning and provide teachers with more choices for innovative instruction. In language instruction, many creative teaching ideas were developed based on mobiles and mobile-assisted methods of teaching and learning to help making language learning more enjoyable and efficient. A new sub-field in computer-assisted language learning (CALL) evolved that focus on using mobiles in language instruction. This sub-field is called 'Mobile-assisted language learning (MALL)'. MALL research studies brought us with many promising findings that indicate that mobiles can be well exploited in class and non-class language instruction (Kassem, 2018, p. 256; Linskens, 2015, p. 116; Shahbaz & Khan, 2017; Uz Bilgin & Tokel, 2018).

Since the importance of vocabulary is proved by many studies such as Abbasi & Hashemi (2013); Cain & Oakhill (2014); and Khan, Radzuan, Shahbaz, Ibrahim and Mustafa (2018b), its teaching is very fundamental for language learning. However, the status of teaching English in Saudi Arabia is very disappointing. Mobile technology can provide many possibilities to enhance EFL learning. Vocabulary learning has been the core of many MALL programs. Nowadays, smartphones, especially web-accessible ones, can provide rich online multimedia-mediated means for vocabulary learning and instruction.

By entering the 21st century, mobile phones began to spread all over the world even in poor countries. This spread inspired many educators and led them to research the potential uses of mobiles in education. Teaching languages is not far from this technological revolution. Many studies examined the efficacy of using mobile-based teaching methods on learning English. This study is concerned with mobiles and their effects on learning English vocabulary.

2. Problem statement

Mobile phones attracted the researcher because of their increasing use and popularity in education. He thought that for teenage intermediate graders, it is easier and more enthusiastic to use their mobiles to learn vocabulary than desktop or laptop computers. On the other hand, the researcher selected vocabulary to explore because vocabulary is evidently very important for language acquisition and learning. He emphasises that vocabulary plays a central role in the whole show of language education.

Therefore, the research problem can be formed as follows:

How do EFL teachers in Sabia view vocabulary m-applications?

2.1. Study questions

This paper wishes to find definite answers to these questions:

1. How do teachers perceive m-applications in terms of usability and simplicity in the field of vocabulary instruction?
2. What are the teachers' perceptions regarding the capability of m-applications to motivate students to learn English vocabulary?
3. Can m-applications enhance collaborative vocabulary learning?
4. What is the expected effect of using m-applications on students' vocabulary learning?
5. Is mobile-based vocabulary instruction (MBVI) more effective than traditional vocabulary instruction (TVI)?

2.2. Study objectives

This study aimed at accomplishing these objectives:

1. Examining the potential impact of using mobile applications on learning and teaching English vocabulary to Saudi EFL learners.
2. Investigating EFL teachers' perspectives towards MBVI.
3. Suggesting ideas to make vocabulary learning environment more interesting, enjoyable and motivating.
4. Exploring new dimensions of using m-applications in vocabulary instruction and suggesting implications to modernise it.
5. Helping English learners to get rid of their fears of foreign language learning.
6. Highlighting the competency of using vocabulary m-applications to be incorporated in Saudi EFL teachers education.

2.3. Study significance

This study may be significant for:

1. Language Teachers: It could help language teachers in using mobile applications to teach English vocabulary. It might shift their eyes to the potentials of m-applications.
2. Language Learners: It may encourage and motivate students to learn vocabulary more easily and enjoyably through m-applications.
3. Educators and Supervisors: It could stimulate educators' and supervisors' interests in designing training courses for language teachers to develop their skills in using m-applications educationally.
4. Syllabus Designers: It might highlight the potential and practicality of m-applications in language learning to prompt them to take m-applications into consideration when they design language syllabuses.

3. Definitions of terms

M-Application: Mobile applications—the applications that concentrate on English vocabulary. In this paper, they are mainly Google Translator, WordWeb and Verbace. They can be installed from Google Play and Apple Store, except Verbace which can be installed from its official website: www.verbace.com.

Vocabulary: The body of words used in a language or specific words used in a particular occasion or field (Harmer, 2015, p. 258).

Usability: The degree to which something is able or fit to be used (Oxford Dictionaries, 2018).

Motivation: The psychological feature that arouses an organism to action towards a desired goal which gives purpose and direction to behaviour (Oxford Online Dictionaries, 2018).

Collaboration: Working together to do a task. It involves sharing ideas, exchanging information and working in groups, whereas cooperation involves dividing the work on a group members and working on each part specifically and independently (Hadjerrouit, 2012, p. 47).

MBVI: Mobile-Based Vocabulary Instruction, which depends on using the board and involves mimicry, repetition and memorisation of words.

TVI: Traditional Vocabulary Instruction (Grammar-translation/audiolingual paper-based methods).

MALL: Mobile-Assisted Language Learning.

3.1. Limitations

This study was executed in Sabia Governorate in Jazan Province and sought to explore the perceptions of male EFL teachers. So, its results might not apply to all EFL teachers all over Saudi Arabia due to area limits, sample limits, exclusion of female EFL teachers and the largeness of population.

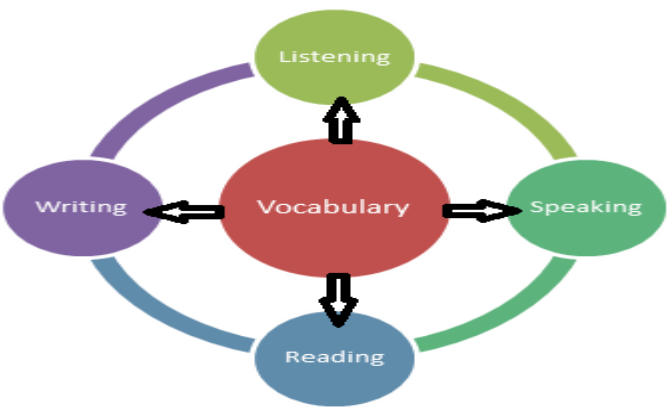
3.2. Literature review

3.2.1. What is vocabulary?

Vocabulary can be simply defined as 'All the words that exist in a particular language or subject' (Cambridge Dictionaries, 2018). It is the body of words used in a language or specific words used in a particular occasion or field (Harmer, 2015, p. 258).

3.2.2. Importance of vocabulary

Vocabulary is central to English language teaching because without sufficient vocabulary, students cannot understand others or express their own ideas. Zhang (2015, p. 4) agreed that very little can be conveyed without grammar, but with the absence of vocabulary nothing can be conveyed, going with Wilkins (1972, p. 111). He approved McCarthy's notice (1990, p. 265) stated that neither grammar nor sounds matter, vocabulary is what matters (Zhang, 2015, p. 4). Words are, can say, the bricks of language whose lack can harden or prevent the constructing of the target language. The following figure illustrates the significance of vocabulary to language skills:



The central role of vocabulary (Designed by the researcher)

Vocabulary is the necessary words to be known for effective communication. Rich vocabulary is like a tunnel to convey the meaning of a speech or a written text. In other vision, it is like the colour tubes of a drawer who cannot draw without them. Linguistic abilities cannot be promoted without enlarging vocabulary repertoire. The early acquisition of vocabulary is a crucial start of students' journey in EFL learning. Vocabulary can ease communication, comprehension, fluency and achievement. In addition, if the vocabulary store is larger, the performance in language skills will be better. By reviewing the

literature, there is a necessity for students to have a considerable repertoire of both receptive and productive vocabulary (Zhang, 2015, p. 4). The importance of vocabulary was further discussed in many studies such as Johnson (2016); Khan et al. (2018b); Sidek & Rahim (2015); and Zhang (2015).

3.2.3. Vocabulary instruction

Though significant, teaching vocabulary is considered to have been a neglected area before the 1980s. Reviewing the literature in the field of language teaching and learning during the 1970s, few studies were found that handled vocabulary teaching and learning. However, this status has changed and more attention has been given to vocabulary teaching and learning in recent years. By the evolvement of the communicative approach, vocabulary started to have the emphasis that it deserves. Vocabulary items were taught indirectly by just presenting new words as they appeared in lessons. It is assumed that vocabulary will grow automatically as a result of practicing of other language skills. Nowadays, vocabulary teaching is a crucial part of any EFL syllabus and should be done in a regular and well-planned way. Some language educators emphasise that vocabulary should be at the centre of language teaching. (Albousaif, 2011, p. 38; Alenezi, 2014; Alghamdi, 2013, p. 46; Nisbet & Austin, 2013, p. 2)

Wu (2015, p. 170) followed Nation (2001) in categorising the strategies of vocabulary acquisition into two types: 1. Incidental vocabulary learning. 2. Intentional vocabulary learning.

3.2.3.1. Principles of effective vocabulary instruction

MacVane (2014, p. 83) reviewed the literature and concluded that vocabulary instruction should include the following in order to be effective: 1. Careful selection of target words. 2. Providing multiple exposures to words. 3. Extended instruction. 4. Development of word consciousness. Alenezi (2014, p. 27) on her part did the same and came up with these implications for teachers: 1. Provide a vocabulary-rich environment. 2. Engage children in vocabulary meanings. 3. Plan and present vocabulary instruction effectively. 4. Consider explicit explanation of vocabulary. 5. Enhance vocabulary instruction with technology. 6. Monitor the students' progress. Furthermore, vocabulary learning depends on repeating, re-cycling and re-presenting of words by the teacher, as well as re-noticing of them by students (Abbasi & Hashemi, 2013, p. 546).

3.2.3.2. Vocabulary instruction in Saudi Arabia

The status of vocabulary instruction in Saudi Arabia do not differ from the whole disappointing status of EFL teaching and learning; hence, vocabulary is a prominent part of any language. Many problems happen regarding English vocabulary such as misuses, wrong pronunciation, confusing words, learning-resistant words and so on. In addition, some EFL learners think that by only memorising much vocabulary can make them acquire the language, but words cannot be taught in isolation from their contexts which may lead to many misuses. Vocabulary items are still taught in the traditional way by presenting them according to the lesson and making students repeat them until memorisation is achieved (Albousaif, 2011, pp. 12–33; Alghamdi, 2013, p. 62; Alzahrani, 2015).

Although the overall view of EFL vocabulary learning and instruction in Saudi Arabia gives a bad impression, there is some light at the end of the dark tunnel. Ash-Shamrani (2013) found positive perceptions among language supervisors and teachers concerning using smartphones to teach English. They believe that mobiles can make a desired change in English classrooms if teachers are trained well on how to utilise mobiles to enhance their students' learning. Similarly, Navariz (2015) emphasised the acceptance of teachers to use mobiles with a unique population.

3.3. Mobile-assisted language learning

MALL is language learning that is assisted or enhanced through the use of a handheld mobile device. MALL is a sub-branch of both Mobile Learning (m-learning) and CALL. MALL has evolved to support students' language learning with the increasing use and constant development of mobile technologies all over the world such as mobile phones (cellphones), MP3 and MP4 players, PDAs and

smartphones such as iPhone, iPad and Samsung Galaxy series. With MALL, students are able to access language learning materials and to communicate with their teachers and peers at anytime, anywhere. MALL has it origins back to 1980s and 1990s that witnessed attempts to use telephones for distant learning. By 2000s, MALL began to be shaped and has its position in language learning research. By the appearance of iPhone in 2009, a revolution has happened in the use of mobiles as a small laptop. Mobile learning is innovative and promising in the field of language learning and teaching (Basal, Yilmaz, Tanriverdi & Sari, 2016; Linskens, 2015, p. 40; Shahbaz & Khan, 2017; Wu, 2015, p. 171).

The usefulness of mobiles in language classrooms is proved by many studies. The utilisation of mobiles in language learning and instruction is prospering nowadays because of its invaluable advantages that offer several applications that become well-known in language learning. Mobile devices are useful in language due to five proprieties (Navariz, 2015, p. 22): portability, social interactivity, context sensitivity, connectivity and individuality. The most notable benefit of mobiles is their potential to elevate students' motivation and engagement and enhance collaboration and communication. However, effective mobile-assisted learning should be based on grounded pedagogical principles. It has to be implemented considering the learner, the content, the context and the delivery mechanism (Ebadi & Bashiri, 2018; Wu & Huang, 2017).

Although MALL is prospective but there are hardships that may negatively affect the practices of MALL. These hardships include time constraints, lack of technical knowledge and accessibility (Wu, 2015, p. 178). In addition, Yang (2013, p. 23) argued that the use of MALL might be challenging to convey the prevailing trends of MALL. The application of MALL depends heavily on having general consensus from language teachers and learners, and an effective pedagogical framework.

3.3.1. Mobile-based vocabulary instruction

Smartphones with their capabilities can play a vital role in facilitating vocabulary instruction and learning. By the spreading of the Wi-Fi Internet almost at most homes in Saudi Arabia, students can access Internet easily from their mobile phones. The Google Play and Apple Store are full of many English language learning applications even from most authentic language educators such as Cambridge and Oxford. Among these applications, there are many vocabulary applications that can be used in language classrooms and outside classrooms. Through networked smartphones, language teachers can carry the students to the world of the Internet fruitfully. Furthermore, students can access unlimited online resources of vocabulary knowledge such as online dictionaries, corpuses and vocabulary websites. Through the Internet, language teachers can present all knowledge about words. Also, teachers can use corpuses to explain different contextual meanings of words. Many vocabulary games are scattered throughout the mobile markets that can help students to learn vocabulary enjoyably and motivationally. Moreover, the mobile Internet devices can offer the advantage of presenting new English words that are not available in printed dictionaries. The effectiveness of using smart mobile phones was evident in many studies such as Nisbet & Austin (2013, p. 1) and Wu (2015, p. 171). The reviewed literature illustrated that mobiles can grow positive perspectives among students towards doing mobile-assisted vocabulary exercises. It can contribute to students' success in language exams and level up their learning motivation (Abbasi & Hashemi, 2013, p. 546; Basal et al., 2016; Jati, 2018; Mahdi, 2018; Suwantarathip & Orawiwatnakul, 2015, p. 169).

3.3.2. Mobile-based vocabulary applications

Applications (Abbreviated Apps) that contain dictionaries, thesauruses, translators, whiteboards, interactive quizzes, flashcards and books are just a few of plenty of applications that can enhance vocabulary learning. For an EFL student, having tools readily available at any time to help him learn a new language, words and culture is of great importance. It is like having a library and a private tutor in a hand (Basal et al., 2016, p. 55; Ebadi & Bashiri 2018; Kassem, 2018; Khodarahmi & Heidari-Shahreza, 2018; Kim, 2018; Nisbet & Austin, 2013, p. 1).

3.3.2.1. Criteria of good mobile-based vocabulary applications

Mobile-based vocabulary application should provide language learners with a comprehensive and well-balanced vocabulary learning program. According to Graves (2009), a mobile-based vocabulary application is considered effective if it consists of four major components: 1. Teaching individual words. 2. Teaching word-learning strategies. 3. Providing rich and varied language experiences. 4. Fostering word consciousness (Nisbet & Austin, 2013, p. 2).

Navariz (2015, p. 41) added two factors that teachers should bear in mind when selecting a mobile application for their instruction. They are 1. Ease of use. 2. Perceived usefulness.

3.3.2.2. Examples of mobile-based vocabulary applications

Below is a compilation of some language learning applications that can be of high utility for vocabulary teaching and learning. They include options from both Android and IOS-based mobile systems. All applications can be downloaded quickly and easily through popular online stores such as *Apple Store* or *Google Play* and *Samsung Store* for Androids (Cruz, 2012, p. 31; Kassem, 2018, p. 252–253; Nisbet & Austin, 2013, p. 3; Yang, 2013, p. 20-22).

1. *Dictionary applications*

It is no longer necessary for ESL teachers and students to carry large, heavy dictionaries, thesauruses or other reference books because the stores of mobile applications present numerous alternatives. Two popular apps which can replace many reference books are *Dictionary.com* and *The Free Dictionary*.

Dictionary.com application offers 2 million definitions, as well as a thesaurus for identifying synonyms and antonyms. It provides sample sentences, audio pronunciation and a voice search option. This can greatly help students know the spelling, meaning and pronunciation of a word.

The Free Dictionary is one of the most comprehensive dictionary applications. It contains not only a dictionary and thesaurus but also has acronyms, abbreviations, idioms, an encyclopedia and a literature reference library. Moreover, users can create a customised homepage that provides games, a language forum, word of the day, spelling bees, word games and much more (Aslan, 2016; Kassem, 2018, p. 253; Nisbet & Austin, 2013, p. 3–4).

2. *Translation applications*

There are several translation m-applications in the market, with varying capabilities. Teachers and students need only to explore the available choices to find the translation application that fit their students' needs. They can be useful for students who have limited English proficiency and need to quickly find an English word to communicate with a native person. Single words or complete sentences can be translated with few touches. Two popular translation applications are *Google Translate* and *Translator with Speech* (Nisbet & Austin, 2013, p. 4).

3. *English launchpad applications*

It is a multipurpose with numerous capabilities. It can host activities. It contains over 700 flashcards with pictures in 20 categories covering topics such as the alphabet, anatomy, animals, appliances, food and drink, fruits, household words and many other useful topics. There are also flashcards for 51 irregular verbs. The flashcards can be used for enrichment, instruction or differentiated learning when studying vocabulary. There are additional tools such as a whiteboard, quiz generator, and an electronic file for storing and sending lesson plans. The flashcard system can be a useful tool as students learn new vocabulary words, and the quiz generator can be used to measure progress (Nisbet & Austin, 2013, p. 4).

4. *Clear speech application*

It is based on the Cambridge University Press series by the same name, written by Judy Gilbert. It can help students learn pronunciation of learned vocabulary. As students train their ears on hearing significant differences regarding different vocabulary aspects such as word and syllable stress,

intonation and word endings. It can assist students to build their vocabulary repertoire by acquiring new words through everyday listening activities (Nisbet & Austin, 2013, p. 4).

5. Idioms applications

It is designed to introduce students to the top 100 most frequently-used idioms and idioms used in conversation topics about animals, business, clothes and colours, food, legalities and negotiations. Students can learn by taking self-administered quizzes covering topics of their choice. There is also a handy alphabetical listing of common idioms for easy reference. This is engaging, funny and popular (Nisbet & Austin, 2013, p. 5).

6. iTooch TOEFL prep application

It is designed to help students preparing for TOEFL. It contains the largest repository of TOEFL questions based on US National Standards. The application has 50 chapters that offer lessons, examples and figures. There are over 1,500 questions with explanations, 135 images and visuals and 278 spoken sound files. Questions address listening, speaking, reading and writing. It is useful in fostering vocabulary growth because students face new words as they read questions and take part in the offered learning activities. It is a comprehensive tool that can be used by students for independent preparation for the exam (Nisbet & Austin, 2013, p. 5).

7. Learn American English-free word power application

It is a comprehensive study program designed to engage students in learning vocabulary and speaking English correctly. The free version helps students master 100 of the most commonly used words in English in an easy-to-use format. Student can view words, hear native pronunciation and record his own voice in order to compare his pronunciation with the native one. Students can take a quiz after learning the words to trace their progress and create an audio word bank for reference and review (Nisbet & Austin, 2013, p. 5).

8. Mobile videos application

YouTube is full of many vocabulary learning videos that can be easily accessed through mobiles. Moreover, teacher-made videos are recommended (Alenezi, 2014, p. 24; Cruz, 2012, p. 31; Hsu, Hwang, Chang & Chang, 2013, p. 404).

9. Text messaging applications

Study TXT is an example of this kind of vocabulary m-applications. It allows students to access to basic concepts of a course. Its database contains 101 messages of both vocabulary and conceptual knowledge divided into 22 modules (Cruz, 2012, p. 33; Yang, 2013, p. 20).

SMS and Text-messaging based programs like *WhatsApp* were found suitable for vocabulary and language learning (Abbasi & Hashemi, 2013, p. 542; Wu, 2015, p. 171).

10. M-games applications

There are many vocabulary games existed in the applications markets. The language teachers should select a game that fits their students abilities and level to ensure that it will gain acceptance among students in order be effective. Here are some exemplary games. *Ball Toss* game can help students identify ending sounds. *Basketball* game teaches students to practice listening for syllables. *Push the Blob* teaches stress patterns. *Stop or Flow* game teaches word sounds (Alenezi, 2014, p. 24; Kassem, 2018, p. 253; Nisbet & Austin, 2013, p. 5; Wu & Huang, 2017, p. 267).

11. Microblogging

Microblogging or Mobile blogging is a new form of blogging and primarily represents Mobile 2.0 technologies. A microblog is a weblog restricted to 140 characters per post and equipped with social networking facilities (Yang, 2013, p. 21).

4. Methodology

This is a descriptive surveying study that was conducted to survey the EFL teachers' perspectives about using m-applications to teach vocabulary to intermediate graders.

4.1. Setting and context

This paper was carried out in Sabia county, Jazan Province during the academic year 2018. The use of mobiles spread among almost all people in the society, especially the youth and youngsters. The new generation of students become more digitally familiar with all kinds of mobiles in general and smartphones in particular. Devices like Apple's iPhone, iPad and Samsung's Galaxy phones, tabs are increasingly seen in hands of most people including the unexpected ones like elders or less educated people. Due to that, the EFL students in the intermediate schools in Sabia are approximately ready to use mobiles for educational uses.

4.2. Population and subjects

The research population was all male EFL teachers who were teaching in the governmental schools of Sabia Directorate of Education in the academic year 2018 A.D. They are approximately 200 teachers. Most of them are young according to the researcher's own experience.

The sample was selected purposively. It consisted of 113 EFL teachers. These teachers are members of a WhatsApp group of EFL teachers who have smart mobiles and are familiar with their ESL/EFL m-applications.

4.3. Instruments

The researcher preferred to use a closed-answer questionnaire for EFL teachers as his only tool to collect data. He designed it in light of Blasco (2016); Brooke (1996); Ebadi & Bashiri (2018); El Boukhari (2015); Lund (2001) and Perez-Paredes, Ordonana Guillamon and Aguado Jimenez (2018).

The questionnaire covered the five questions of this paper. It was divided into five categories of five statements. Generally, it consisted of 25 items with five choices, *strongly agree, agree, not sure, disagree* and *strongly disagree*. Each category had five statements to survey EFL teachers perspectives about 'Using M-Applications in Teaching English Vocabulary' in terms of usability, motivation enhancement, collaboration development, vocabulary learning and MBVI compared to TVI.

For statistical analysis, the researcher devoted 4 marks for *strongly agree*, 3 for *agree*, 2 for *not sure*, 1 for *disagree* and 0 for *strongly disagree*. Thus, each category could be corrected out of 20 marks and 100 marks in total to answer the research questions. Therefore, the higher the score, the greater the influence of the vocabulary m-applications.

To check the reliability of the questionnaire, the researcher used the split-half method. Its reliability coefficient scored 0.821 > 0.70 according to Spearman-Brown formula, which indicated a high degree of reliability.

To assure the validity of the questionnaire, face validity was executed in a narrow way. It was validated and approved by the researcher's professor. Moreover, self-validity was calculated and found it to be 0.906, which is high validity.

4.4. Procedures

- After deciding the topic of the paper, the researcher began designing a 25-item questionnaire to language teachers.
- After taking his professor's approval, he converted it to an electronic questionnaire using Google Forms, besides keeping the paper copy to be used alternatively.
- The questionnaire was distributed online via WhatsApp messenger to a WhatsApp group of EFL teachers in Sabia County.
- 113 teachers managed to answer the questionnaire out of nearly 200.
- Replies to the questionnaire were collected periodically and analysed later on.

4.5. Data analysis

The researcher used SPSS and Microsoft Excel to analyse the collected data statistically. He calculated the mean and standard deviation of each item of the questionnaire. To do that, he turned the responses to questionnaire items into numbers, as previously stated, to be analysed statistically. In addition, he applied a one sample *T*-test to check statistically if there is a significant difference between each item's mean and standard population mean (SM = 2) and find statistical answers to research questions.

The researcher also used Spearman-Brown formula to find the reliability coefficient to check the reliability of the questionnaire following the split-half method. The reliability coefficient is considered high if it is above 0.70. Moreover, self-validity coefficient was calculated by square rooting the reliability coefficient.

5. Results

The researcher used SPSS and MS Excel to analyse the results statistically. Lets' now sail into these arising results and discover what indications did they reveal.

Table 1. The statistical analysis of questionnaire's items

***N* = 113**	**Statistics**			**One-sample *T*-test Standard Mean = 2**				**Teachers' Perspectives**
Item No.	***Mean***	***Std. Deviation***	**Std. Error Mean**	***t***	**df**	***Sig. (2-tailed)***	***Mean Difference***	
Category 1: Mobile Applications Usability								
1	3.465	0.667	0.102	14.399	42	0.000	1.465	Positive
2	2.884	0.851	0.130	6.809	42	0.000	0.884	Positive
3	3.186	0.732	0.112	10.623	42	0.000	1.186	Positive
4	3.535	0.505	0.077	19.943	42	0.000	1.535	Positive
5	3.256	0.727	0.111	11.330	42	0.000	1.256	Positive
Total	3.266	0.6964	0.1064	12.6208	42	0.000	1.2652	Positive
Category 2: Mobile Applications and Motivation								
6	3.489	0.551	0.084	17.718	42	0.000	1.488	Positive
7	2.721	1.054	0.161	4.486	42	0.000	0.721	Positive
8	3.233	0.718	0.110	11.251	42	0.000	1.233	Positive
9	2.791	0.914	0.139	5.670	42	0.000	0.791	Positive
10	3.721	0.454	0.069	24.865	42	0.000	1.721	Positive
Total	3.191	0.7382	0.1126	12.798	42	0.000	1.1908	Positive
Category 3: Mobile Applications and Collaboration								
11	3.140	0.675	0.103	11.063	42	0.000	1.140	Positive
12	3.349	0.650	0.099	13.599	42	0.000	1.349	Positive
13	3.116	0.793	0.121	9.229	42	0.000	1.116	Positive

14	2.977	0.801	0.122	7.992	42	0.000	0.977	Positive
15	3.395	0.495	0.075	18.495	42	0.000	1.395	Positive
Total	3.195	0.6828	0.104	12.0756	42	0.000	1.1954	Positive
Category 4: Mobile-based Vocabulary Learning								
16	3.442	0.502	0.077	18.816	42	0.000	1.442	Positive
17	3.349	0.482	0.077	18.341	42	0.000	1.349	Positive
18	3.465	0.505	0.077	19.036	42	0.000	1.465	Positive
19	3.163	0.754	0.115	10.116	42	0.000	1.163	Positive
20	3.093	0.781	0.119	9.176	42	0.000	1.093	Positive
Total	3.302	0.6048	0.093	15.097	42	0.000	1.3024	Positive
Category 5: MBVI versus TVI								
21	2.791	0.861	0.131	6.024	42	0.000	0.791	Positive
22	3.674	0.474	0.072	23.158	42	0.000	1.674	Positive
23	3.651	0.482	0.074	22.452	42	0.000	1.651	Positive
24	2.977	0.801	0.122	7.992	42	0.000	0.977	Positive
25	3.116	0.697	0.106	10.498	42	0.000	1.116	Positive
Total	3.242	0.663	0.101	14.0248	42	0.000	1.2418	Positive
Gross	3.239	0.67704	0.1034	13.32324	42	0.000	1.23912	Positive

From Table 1, we observe that the values of all means of the questionnaire items are above standard population mean (SM = 2). Item 10 scored the maximum mean (3.721 out of 4), whereas item 7 scored the minimum mean (2.721), as shown in Figure 1. Therefore, the researcher assumes that most teachers agreed on each item in various degrees. These values indicate positive perspectives of teachers about vocabulary m-applications.

To examine the significance of each item's mean, the researcher conducted a one sample *T*-test at the significance level α = 0.01, as shown in Table 1. This test aims at measuring how far up or down each item's mean is from SM = 2. He chose 2 because it is the mediating value of values 0–4. SM = 2 indicates a neutral perspective neither positive nor negative. The significance values of all items were found to be significant since they are bigger than α = 0.01. In other words, the difference between each item's mean and SM = 2 is significant. So, teachers' perspectives about each item were proved to be positive.

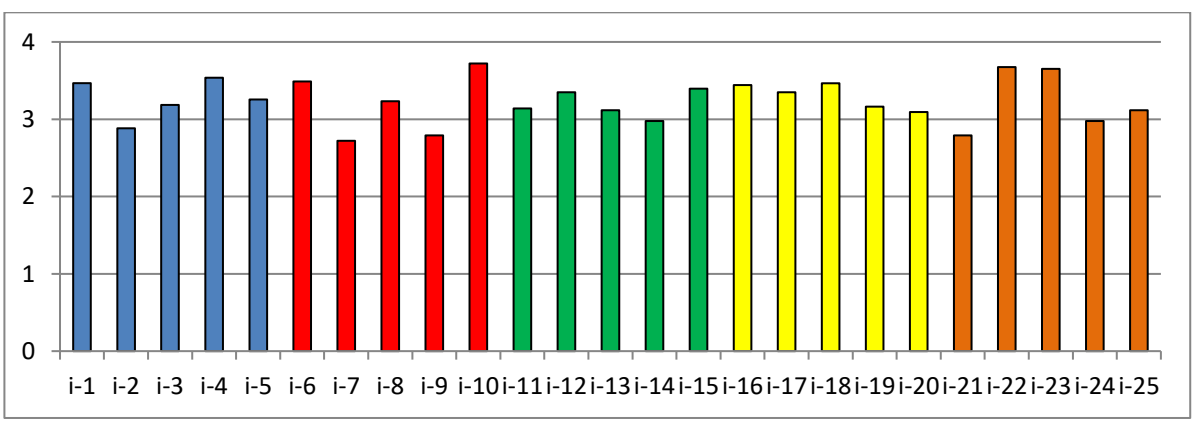


Figure 1. Means of questionnaire items

To analyse each category statistically, the researcher calculated the average mean and standard deviation of each category. Table 1 reveals that the average mean of each categories is higher than standard population mean (SM = 2). This clearly indicates almost a full consensus among teachers on the usability of m-applications and their role in promoting students' motivation, collaboration, vocabulary learning, and finally, teachers' preference of MBVI to TVI as illustrated in Figure 2.

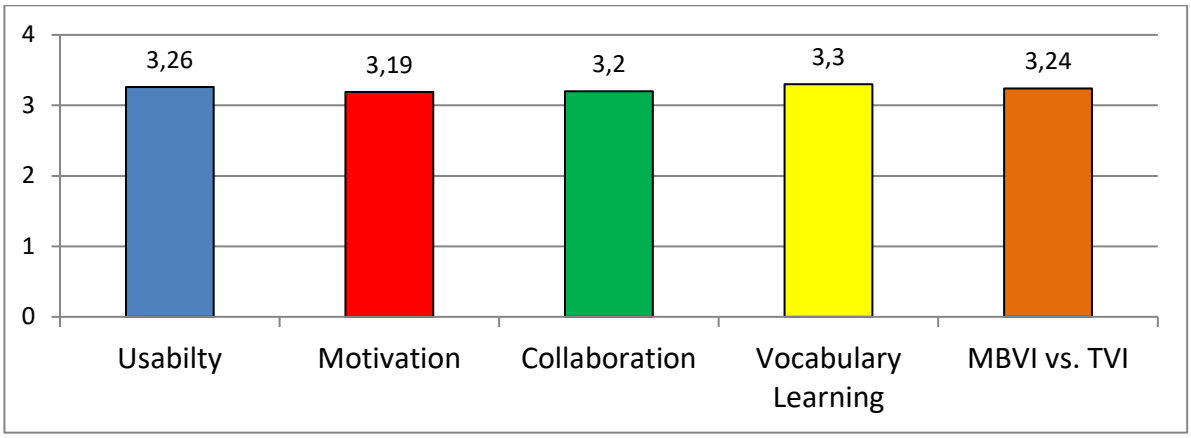


Figure 2. Means of the questionnaire categories

To verify the significance of the categories' means, the researcher applied a one sample *T*-test, as shown in Table 1. All means differences are found to be significant since their significance values are all $0.000 < \alpha = 0.01$.

Then, the researcher marked the questionnaire items again out of 20 and calculated their total mean to examine the total perspective of teachers about MBVI. In addition, to examine the significance of the total mean, the researcher conducted a one-sample *T*-test. The significance value is $0.000 < \alpha = 0.01$. All results were shown in Table 1.

6. Discussion

After illustrating the whole results fully above, let us discuss what was found and relate it to the literature in this section. The researcher discusses the results in light of the research questions.

Q1: How do teachers perceive m-applications in terms of usability and simplicity in the field of vocabulary instruction?

The results of Category 1 in Table 1 reveal that the teachers view vocabulary m-applications as simple and easy-to-use. They perceived them as a helpful teaching/learning tool whether inside or outside the classroom. This result has a strong support from previous studies like Basal et al. (2016); Elaish, Ghani, Shuib and Al-Haiqi (2017); Gurkan (2018); Kassem (2018); Khan, Radzuan, Shahbaz and Ibrahim (2018a) and Perez-Paredes et al. (2018).

From this finding, it can be interpreted that the most vocabulary applications are designed to help all language learners of various levels of proficiency in a simple and usable way. However, simplicity and usability may differ from one m-application to another. Anyway, the researcher emphasises the teachers' role in introducing vocabulary m-applications to their students and training them on how to use these m-applications.

Q2: What are the teachers' perceptions regarding the capability of m-applications to motivate students to learn English vocabulary?

If we look at category 2's results in Table 1, the researcher can strongly assume that m-applications are an effective tool in enhancing students' motivation to learn vocabulary and English in general. Same findings can be read in many studies such as Elaish et al. (2017); Goz & Ozcan (2017); Linskens (2015) and Wu (2015).

In fact, mobiles proved to be motivating due to its novelty and modernity that arouse curiosity to discover and use them. Curiosity, in turn, makes students more motivated and committed to complete the given vocabulary activities. M-applications may solve motivation problems among Saudi students.

Q3: Can m-applications enhance collaborative vocabulary learning?

In light of category 3 results, we find a significant evidence of the usefulness of m-applications in providing a good environment for collaborative vocabulary learning. Information about vocabulary can be exchanged between students through many social media m-applications, especially Whatsup. Evidences can be observed in studies like Linskens (2015); Navariz (2015) and Wu (2015). Students can have peer feedback and collaborate in groups to accomplish the assigned tasks. In fact, the students who are learning through technology tend to be collaborative. Working with a new technology like mobiles makes students seek technical assistance from their peers more than their teacher. It begins as a technical assistance and can develop to be an assistance to learn language and answer activities. This means that collaboration through mobiles developed gradually from simple to more complex, effective collaboration.

Q4: What is the effect of using m-applications on students' vocabulary learning?

The results of category 4 in Tables 1 indicate clearly that m-applications can contribute effectively to improving vocabulary learning. Besides, they seemed to be efficient teaching tools that language teachers can exploit in various ways to enhance vocabulary and language learning and give students the opportunity to learn outside the classroom. The effectiveness of using mobiles to teach language is proved in many studies such as Ebadi & Bashiri (2018); Gurkan (2018); Mahdi (2018); Rajayi, Poorahmadi and Poorahmadi (2018); Shahbaz & Khan (2017).

The researcher justifies that mobiles can work as a platform to link students with various authentic vocabulary m-applications that can enlarge their vocabulary knowledge. Apple Store and Google Play have plenty of various good vocabulary m-applications that can be of great usefulness.

Q5: Is mobile-based vocabulary instruction (MBVI) more effective than traditional vocabulary instruction (TVI)?

As clarified in Table 1, the results of category 5, that contains a comparison between MBVI and TVI, indicate strongly that the teachers preferred to use m-application in their teaching of vocabulary. This finding has implicit evidence in Aslan (2016), Basal et al. (2016), Celik (2018), Mahdi (2018) and Uz Bilgin & Tokel (2018).

This is because of the multiple facilities and experiences that mobiles can offer to a language learner. Boredom is the prevailing hindrance in traditional teaching. On the one hand, students are eager to try something new like m-applications that can break such a stagnancy in language instruction and on the other hand, teachers can modernise the language teaching methods that seemed to be unsuccessful.

7. Conclusion

This paper aimed at surveying Saudi EFL teachers' perspectives about the use of m-applications in teaching English vocabulary to intermediate graders. Its final outcome indicates clearly that mobiles can contribute to the process of vocabulary learning and instruction effectively. The findings revealed that the teachers thought that m-applications are simple, usable and advantageous. They can enhance students' motivation and collaboration to learn vocabulary. They considered m-application as an effective tool to teach and learn vocabulary. Moreover, they liked the mobile-based way of vocabulary instruction and preferred it to traditional methods. Since network technologies are spreading increasingly in Saudi Arabia, the use of vocabulary m-applications is reasonable and will be helpful. In addition, students can find it easy to access an m-application anytime and anywhere. In the long run, vocabulary m-applications can help teachers to produce more autonomous language learners that can take care of their learning.

Actually, vocabulary m-applications may be an interesting possible solution to the demotivated Saudi EFL students, which is widely noticed by language teachers. These m-applications can be of

great benefit if they are well selected and well exploited technically and pedagogically in the classroom and outside it. Teachers should consider the use of mobiles in their instruction and prepare themselves for that in order to be a 21st-century language teacher.

7.1. Recommendations and instructional implications

After reviewing many related studies in the literature and relying on the findings, the researcher came up with the below recommendations and implications that may help enhance mobile-assisted vocabulary instruction and learning in Saudi schools (Kassem, 2018, p. 256; Khan et al., 2018a; Linskens, 2015, p. 110–113; Mahdi, 2018; Navariz, 2015, p. 67; Rajayi et al., 2018, p. 27; Uz Bilgin & Tokel, 2018, p. 20). He summarised them in the following points:

1. A vocabulary m-application should be selected in agreement between both teacher and students.
2. It should be easy to use and well-perceived by students.
3. Instruction should be based on good pedagogical framework.
4. Environment should be rich and oriented to MBVI.
5. Students should be trained on how to benefit from different vocabulary m-applications in the market.
6. Above all, teacher should be technically-competent and know how to use such m-applications.
7. Teacher should support his students to use vocabulary m-applications and assign exercises based on mobiles.
8. Teacher should encourage vocabulary self-learning via mobiles.
9. Regular teachers meetings and symposiums are needed to exchange ideas about MALL.
10. Teacher should allow students to use their mobiles in order to search for the pronunciation or meaning of a new word.
11. Teacher should help students who lack technical knowledge.
12. Mobile learning can be used extracurricularly or within EFL curriculum.
13. Mobile-based instruction should be incorporated and activated in language curriculum.
14. Teacher should reinforce collaborative pairwork and group work through mobiles.
15. Teacher's knowledge should be up to date.
16. Technically-competent teachers should contribute to MALL by designing m-applications of their own.

7.2. Future studies

The findings of this humble paper cannot be generalised on all Saudi intermediate students due to the smallness of its sample. So, the researcher may suggest more future studies on the effect of vocabulary m-applications as follows:

1. A similar study should be conducted on girls to complete the whole vision.
2. The influence of m-applications on elementary and secondary students' vocabulary knowledge should be explored.
3. A bigger sample size in different Saudi provinces is recommended.
4. Using vocabulary m-applications in a blended learning environment needs to be examined.
5. The impact of using m-applications to teach other language components and skills to Saudi EFL learners needs to be investigated.

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Appendix

N	Item Statement	4	3	2	1	0
	Teaching Vocabulary through Mobile Applications					
	Mobile Applications Usability	**Strongly Agree**	**Agree**	**Not Sure**	**Disagree**	**Strongly Disagree**
1	I think vocabulary mobile applications are easy to be used by my students.					
2	I think vocabulary mobile applications are usable and simple to be used in my teaching.					
3	Learning vocabulary through mobiles will bring more advantages than disadvantages to my students.					
4	Viewing, editing and reviewing will be easy when my students work on mobiles.					
5	Mobiles characteristics (such as portability, accessibility, editing and multimedia) are relevant for my students' vocabulary learning.					
	Mobile Applications and Motivation	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
6	My students will enjoy learning vocabulary via mobile.					
7	Mobiles can motivate my students into more active and interactive vocabulary learning.					
8	Mobiles can arouse my students' interest in learning vocabulary.					
9	Mobiles can encourage my students to participate in vocabulary activities and contribute to group work.					
10	I think my students will like to continue using mobiles to learn vocabulary next times.					
	Mobile Applications and Collaboration	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
11	Mobiles will drive my students to participate more in vocabulary exercises.					
12	My students will like learning vocabulary collaboratively via mobiles.					
13	Mobiles will enable my students to fully interact with their group members.					
14	Mobiles can make my students benefit a lot from their group members.					
15	Mobiles can facilitate my students' group work.					
	Mobile-based Vocabulary Learning	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
16	I think m-applications can help develop my students' ability to learn vocabulary.					
17	I think m-applications can enable my students to work on vocabulary activities and send their answers more easily.					
18	I think m-applications can enrich my students' vocabulary knowledge.					
19	Learning vocabulary via m-applications will make					

	my students more careful about words, spellings and meanings.					
20	Using m-applications will help students to develop the quality of words production.					
	Mobile-based Vocabulary Instruction (MBVI) versus Traditional Vocabulary Instruction (TVI)	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
21	I think MBVI is more effective than TVI.					
22	MBVI can make English classes more interesting than TVI.					
23	MBVI can arouse my students' learning motivation more than TVI.					
24	MBVI can promote my students' vocabulary learning more than TVI.					
25	MBVI can make learning vocabulary easier than TVI can make.					