Chapter One: Introduction

1.1 Overview

This chapter provides an overview of the research background, statement of the problem, and, objectives of the research, research questions, followed by the significance of the research, and research matrix, in addition to, delimitations of the study. Lastly, the design of the Thesis is presented.

1.2 Background of the Study

Today the Information and Communication Technology (ICT) has been increasing rapidly. The result of this growth can be realized in almost every single phase of learning area: presentation of information, tasks, assessment, interaction and performance of learners. Moreover, these new technologies have constantly increased the opportunity for interaction and flexibility amongst students around the world, overcoming the time and space and individual differences obstructions.

At present, mobile phones are the most widespread revolution, and they have a significant place mainly in young people's lives. All over the world, mobile phones are more than personal computers. Its extensive use and its features and characteristics and function such as mobility, reachability, and localization, and personalization, mobile phone technology offer a great perspective in language learning atmospheres in particular.

In the last years, the Internet has occurred as a simple means for the fast global distribution of information. The Internet is specifically well suited to providing access to data and applications information on advanced materials and products once the data are accessible and available.

Teachers have become more and more interested in the learning profits that mobile technology can offer to students in and out of classrooms. Hence, this study seeks to investigate learners' attitudes toward using mobile in English language learning process.

Koole, (2009) states that there are some matters and factors have important roles in the use of mobile devices in learning situations. Physical appearances of a mobile phone such as its size and weight as well as input and output capabilities such as keypad vs. touchpad and screen size and audio functions are among the features which should be assessed in this respect. The learner skills and prior knowledge and experience with mobile devices for learning, as well as the learner's attitude towards the learning through mobile phone play a central role in the production of such a mobile-based task.

The mobile revolution is finally here. Wherever one looks, a sign of mobile penetration is irrefutable: cell phones, PDAs, MP3 players, portable game devices, handhelds, tablets, and laptops abound. No demographic is resistant from this phenomenon. From kids to seniors, people are increasingly connected and are digitally communicating with each other in ways that would have been impossible only a few years ago. (Ellen D, 2005).

Chen, (1999) discusses that modern technologies such as "mobile phones" would give us the chance to, extremely advance the means to gather, store, and organize information in digital forms of all types - data, text, images, motion video, sound, and integrated media - and make it available and shareable for searching, retrieval, and processing via high-performance communication networks in ways that transcend distance and time. With the

rapid technological development, Sudan now has a strong ability to provide better infrastructure and other essential situations for higher education. M-learning is believed to be a promising approach since it offers students ways to interact with experienced and trained teachers. However, the deployment of M-learning in higher education needs a lot of effort to overcome all difficulties facing the deployment of this new technology. There are several issues facing M-learning deployments such as shortage or lack of awareness and motivation (Wang, Wu and Wang, 2009), technical aspects concerning appropriate mobile devices and internet connectivity issues (Naismith and Corlett, 2006; Park, 2011).

1.3 Statement of the Research Problem

Now, mobile technologies have been increasingly combined into learning. The wide use of smartphones and another portable and wireless devices has been expressively changing the ways of learning in many contexts, including language learning (Kukulska, 2008).Though mobile devices have come into every aspect of our lives and has used in supporting a wide range of learning events, there is insufficient understanding of the factors that impact the distribution of mobile -learning in higher education. In addition, there is also a lack of resources available for all M- learning stakeholders on how to organize and support M-learning in university education (Litchfield et al., 2007; Cherian and Williams, 2008) Moreover, there **is** not much of research was done to know how mobile devices will be used to enhance the learning process. In addition, there are many English learners are behind or do not cope with these changes and their usage of mobile still does not suffice and are not well used. Forgetting some weaknesses that exist in the straight and direct contact between a teacher and students and in the first-hand feedback

that the traditional classroom education has, the traditional education generally relies on the condition that equally a teacher and students must physically involve in the study (Georgiev et al., 2004).

M-learning is one of the important new educational methods that influence our normal daily study. The adoption of a wide range of web-based tools has given rise to the tendency of e-learning in education worldwide (Yuen et al., 2009). Therefore, the researcher is trying to investigate factors affecting the use of mobile devices in the English Language in Sudanese EFL Context ; the perception of learners and teachers in the Departments of English within the Colleges of Education of three Sudanese Government Universities. It also aims to demonstrate the benefits of using mobiles in English language learning and identify the barriers that hinder learners from using mobile devices in English Langauge Learning.

1.4 Objectives of the Study

This study aims to:

1. To determine the learners' attitudes towards using mobile in English language learning.
2. To find out the teachers' attitudes towards using mobile devices in English language learning.
3. To demonstrate the benefits of mobile in English language learning.
4. To identify the barriers that obstruct English language learners from the using of mobile.

1.5 Research Questions

This study attempts to answer the following research questions:

1. How do students perceive mobile devices as a learning tool integrated into class and what are their attitudes towards mobile learning?
2. To what extends teachers are ready to use mobile in English Langauge teaching?
3. What are the benefits of mobile in English language learning?
4. What are the barriers obstruct English language learners from using mobile devices in their learning process?

1.6 Research Hypotheses

H1: There is a significant association between using a mobile phone as learning tool integrated into the classroom and the benefits that the student acquired.

H2: There are various barriers that could obstruct learners to use the mobile device in English language learning.

H3: There are no statistically significant differences between participants' regarding using mobile devices in terms of attitudes, benefits, and barriers, related to age and gender

H4: English Langauge teachers have negative attitudes towards the use of mobile in English Langauge learning

1.7 Significance of the Study

This study addresses a newly approach in foreign language learning both in theory and in practice. Studies about mobile learning and English language do not have a place in Sudanese libraries, and they aren't addressed by the investigators and researchers. Thus, the literature lacks research exploring and investigating the learners' and teachers' perception towards m-learning. Furthermore, growths and improvements in mobile technologies and innovations in EFL/ESL learning have been on the progression and more research will always be required in such growing field.

The results of this research will be of interest to educators and university managers concerned with the use of mobile devices in higher education. It also offers possible contributions to applied linguistics. Firstly, it improve teaching practice by introduction mobile devices in English language field, through enlightening the policy makers of the role of mobile learning and evaluating the present situation of the English language learners towards mobile learning; Secondly, it helps in spreading the awareness of mobile learning and its role in learning among English language learner. Thirdly, it helps in identifying the practice which is necessary for effectively consider mobile as an effective tool for language learning resources. Fourthly, it offers instruction and guideline for the learners to realize and understand the significance of using mobile devices in their learning process .Fifthly, it offers a better understanding for policymakers on the university English language learners situation to build coherent strategic plans to carry out mobile-learning and improve the learning environment that suits the new technology and its demands. Sexily, to present the potentials and challenges

offered by the information and communication technologies such as mobile devices for the English language learners. Finally, the positive findings of this research might be suitable and useful to educational designers and textbook publisher who are responsible for designing university courses.

1.8 Research Methodology

In this study, both quantitative and qualitative methods were used to collect data from the selected candidates. These methods aided in building a base on a complete understanding of the research problem. The use of both quantitative and qualitative methods together known as mixed methods.

Mixed methods research is an approach to review that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study. Thus, it is more than simply collecting and analyzing both kinds of data; it also involves the use of both approaches in the cycle so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell & Plano Clark, 2007). In this study, the qualitative method was used for triangulation of the data. Mixed methods of research are those studies or lines of inquiry that integrate one or more qualitative and quantitative techniques for data collection and/or analysis Borkan (2004).

The researcher used a well-structured questionnaire to elicit responses from the students while interviews of nine participants were conducted in order to provide more understanding of teachers' perceptions of mobile learning. The Questionnaires were administered within 90 undergraduates' learners from three Sudanese public universities, English college of education, Department

of English language, fourth-year students', where the systematic random sample method was applied. Respondents were provided with five- point Likert scale from 1 strongly Disagree to5 Strongly Agree (Likert, R. (1932). The information gained from the questionnaires was analyzed using the software Statistical Package for Social Sciences (SPSS). After interpretation of the results, then conclusion and recommendation are drawn.

1.9 Ethical Considerations

As in every other aspect of the research, the ethics have its own important value added to the research. In order to conduct interviews with the interviewees of this study, several ethical procedures were followed:

- Proper official and unofficial consultations were made to obtain permissions from the respondents in order to gain their trust.
- The purpose of the study was explained and emphasized as well as the need to get such information.
- All participants were assured of confidentiality and anonymity throughout the study.
- The results were distributed to the participants.

For the interview, the consent form was given to each participant individually and personally by the researcher. If they were willing to participate in the interview, they could sign their name on the form.

1.10 Delimitations of the Study

In order to keep focused and to ensure validity, some issue should be considered. There are three delimitations of this study. Firstly, this study was intended to investigate students' perceptions and attitudes about using mobile devices in English language learning. Thus, the findings from this study may not be generalized to assessing the impact or the

effectiveness of using mobile in English language learning in higher education. Secondly, the number of contributors was small (N = 90), from only three public universities so, their response may not be equally applicable to all English learners perceptions. Finally, Time of study: December 2013 - December 2016.

1.11 Research Design

This thesis comprises five chapters. Chapter one contains, the introduction to the study, statement of the problem, research questions, research objectives and significance of the study have been discussed and explained in detail. In chapter two, the literature will be reviewed under several headings. Chapter three is a description of the research methodology for this study it includes the research method a description of research instruments, participants, procedures are illustrated. Data will be analyzed in detailed, and followed by the discussions of the findings with respect to the research questions and the literature in chapter four. Chapter Five concludes the study with some conclusions and recommendations and proposal for future research and follow up action.

1.12 Summary

In this chapter, the background of the study, statement of the problem, and objectives of the research, research questions, have been discussed and explained in detail, followed by the significance of the research, and research matrix, in addition to, delimitations of the study. Finally, the design of the Thesis is presented. In the next chapter, the literature will be reviewed under several headings. In the following chapters, the methodology of the study and the results will be presented. Finally, the findings of this study

will be discussed in light of the findings of previous research in the literature in the last chapter

Chapter Two

Theoretical Framework and Literature Review

2.1 Introduction

This chapter provides a review of relevant literature in the field of mobile learning, it consists of many parts. The first part of the literature review focuses on the concept of mobile learning (Traxlor, 2005). The second part seeks to identify the existing learning theories in relation to mobile learning such as: behaviorist (Naismith et al., 2004), constructivism learning theory, Dewey (1916), Piaget (1973), Vygotsky (1978, 1978) and Bruner (1996) and situated learning theory (Brown, Collins, and Duguid, 1989), Collaborated learning theory,(Naismith et al., 2004), informal and lifelong learning theory Naismith et al., 2004), were covered. In addition to, Diffusion of Innovation Theory, (Roger, 2005); and Technology Acceptance Model (TAM) (Davis, 1989) have been excessively used.

Secondly, the chapter reviews the association between e-learning and mobile learning, (Brown, 2003; Georgiev et al., 2004). Moreover, an overview of the Influence of mobile phones in Education (Ellen D, (2005) were covered. The benefits of mobile learning and challenges and drawbacks were presented.

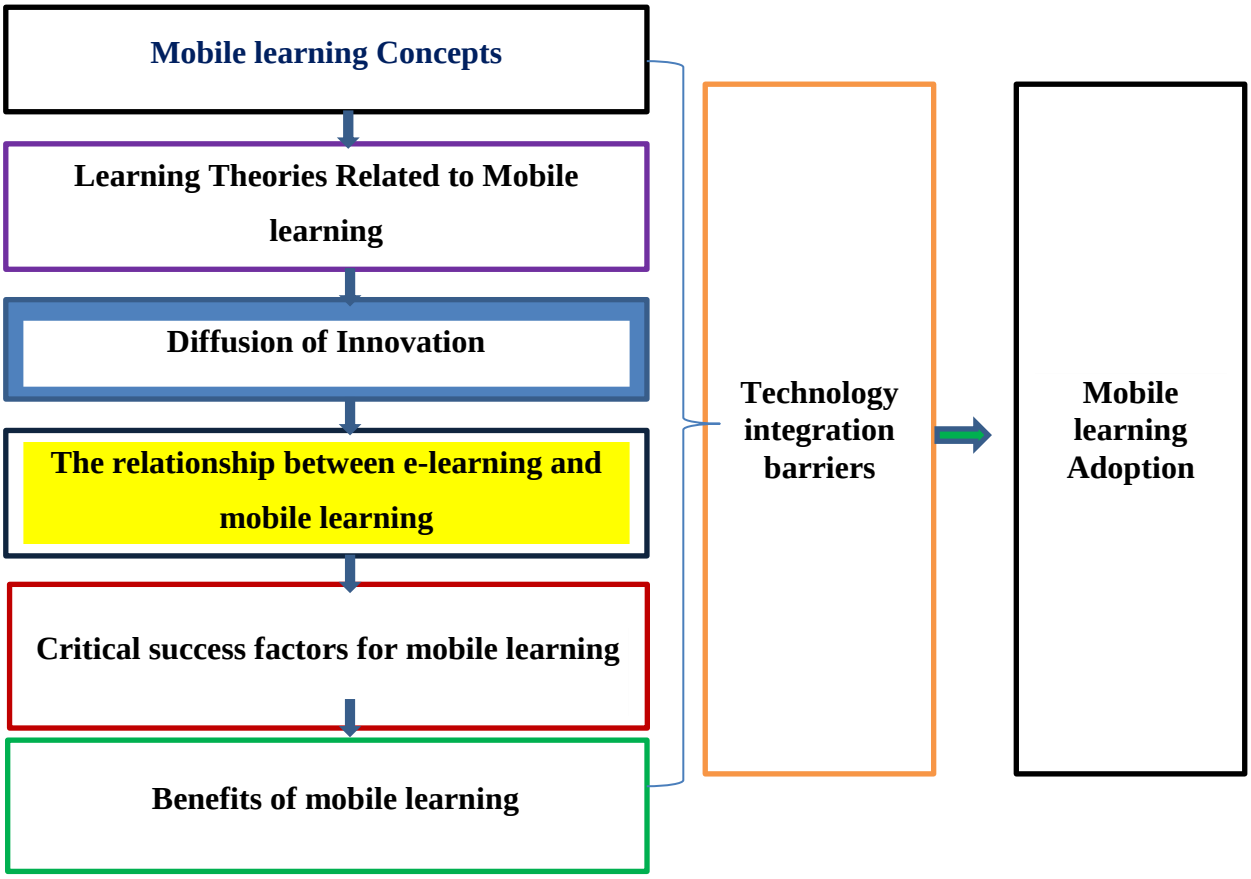

Figure1: Research Theoretical Framework, (Ezzeden, 2016)

2.2 Mobile learning

There have been tries to classify the definitions of mobile learning used in the literature into a comprehensive framework. The understanding of mobile learning will itself influence the progress and direction of mobile learning and its perception and acceptance by the broader educational community. According to Traxlor, (2005), mobile learning is, "any educational provision where the sole or dominant technologies are handhelds or palmtop devices". This definition may mean that mobile learning could include mobile phones, smartphones, personal digital assistants (PDAs) and their peripherals, perhaps tablet PCs and perhaps laptop PCs, but not desktops in carts and other similar solutions.

Traxler, (2005) identified three categories of mobile learning been used in past literature. He identified that early approach to defining mobile learning focus on the nature of mobile devices, referring particularly to handheld or palmtop electronic devices. The next generation of definitions exhibited a greater focus on mobility but, was largely still directed towards the mobility of the technology. The third category moved away from considerations of the technology to emphasize the mobility of the learner and the learning process.

Many researchers and educationalists considered mobile learning as the immediate descendant of e-learning. Both (Quinn, 2000) and (Pinkwart, et al, 2003) defined m-learning as

"e-learning that uses mobile devices".

Mostakhdemin and Tuimala, (2005) views mobile learning simply as the expected development of e-learning, which completes a missing component of the solution (i.e. adding the wireless feature).

Mobile learning refers to any learning that takes place when the location of the learner is not fixed, or the process of learning is enhanced by using mobile devices and technologies (O'Malley et al., 2003). (Quinn, 2000) considered mobile learning as the overlap of using e-learning (learning by using information technologies and devices) and mobile computing, which includes mobile applications in the small, wireless, and portable devices such as smartphones and PDAs (Quinn, 2000). However, as the mobile technologies are developing rapidly, the shift to mobility is occurring day by day, and the mobile devices are now becoming more portable than ever. The mobile activities of students once consisted of carrying textbooks, pencils, and paper from classroom to classroom.

At present, mobile learning has been reconsidered as the activities of using capable electronic information communication technologies and devices to support students to access meaningful learning materials both inside and outside classes (Messinger, 2011). With time, the perspectives and understanding of mobile learning are becoming broader and deeper, since many researchers and communities have defined mobile learning differently, based on their own backgrounds and experiences. This has made the characteristics and properties of mobile learning even harder to define. Currently, the concept of mobile learning is somehow mistaken. As Sharples, (2007) said "it seems to be all things to all people" (Sharples, 2007).

2.3 Learning Theories in Relation to Mobile Learning

Naismith et al, (2004) have briefly identified main theories and areas of learning related to learning with mobile technologies. They are a behaviorist, constructivist, situated, collaborative, informal and lifelong learning, and learning and teaching support.

Currently, theoretical underpinnings of mobile learning research are mostly based on the work of (Naismith et al, 2004), who compared new mobile learning practices against existing learning theories, which are a behaviorist, constructivist, situated, collaborated, informal and lifelong learning.

2.3.1 Behaviorist learning theory

Behaviorist learning emphasizes learning experiences gained as a change in *"observable actions with proper stimulus and response.*

This approach is predetermined, constrained, sequential and criterion-based "(Juhary, 2007, pp. 378).

With the advance of mobile technologies, mobile learning makes it possible to form a drill and feedback mechanism complied with the behaviorist learning theory. Specifically, mobile learning can give learners content specific questions, then gather their responses in a rapid manner and provide instant feedback by such as using wireless network or SMS, which fits with the behaviorist learning paradigm (Naismith et al., 2004).

2.3.2 Constructivist learning Theory

The constructivist theory highlights gaining learning experience in a way that learners actively build new ideas or perceptions based on both their earlier and existing knowledge (Naismith et al., 2004). With a mobile phone, a learner can build his/her own knowledge and share it easily and freely with peers regardless of time and place. Specifically, an easy way for mobile learning to facilitate an immersive constructivist learning experience is to offer edutainment (e.g. handheld games) (Corbeil and Valdes-Corbeil, 2007).

Situated Learning Theory

Situated learning concentrations on learning events that occur in reliable contexts (Naismith et al., 2004), where the situation itself appears to be a part of education resources. For situated learning, the atmospheres can be pre- organized, such as studying in a museum (Etxeberria et al., 2007), or naturally developed, such as watching birds in open air (Chen et al., 2008). Clearly, situated learning experience can be grasped via three protocols, namely problem-based learning, case-based learning, and context-aware learning (Naismith et al., 2004).

According to Chan, (2006), although advanced ideas on teaching and learning have been progressively presented over the past few decades, traditional views have been used in many schools. Such view often regards students as "empty vessels" waiting to be occupied with knowledge. Students are now learners who come to the classroom with their unique backgrounds, experience, theoretical frameworks, learning styles and personal conditions. Teachers now become learning facilitators and organizer rather than basins of knowledge. Psychology of learning has shifted from behaviorism to cognitivism to constructivism. For the teachers to cope with changing or rearranging schools have to adapt the current innovation efficiently in teaching and learning procedures as well as school management have to change meaningfully for e-learning to be successful. Moreover, ICT implementation cannot proceed efficiently and effectively without suitable reform of in-service professional development of teacher, reform of teacher preparation programs, and substitutions of a learner-centered approach for an outdated teacher-centered approach to education.

According to Charalambos, (2005) the reorientation to a learner-centered approach as well as a constructivist approach has contributed critically towards effective implementation of ICT, as an aid to teaching and learning. Teacher, therefore, need to be given ample opportunity to engage in meaningful activities, collaborate with peers, exchange ideas, provide and receive feedback from peers, and reflect critically on their works. Constructivism is both a philosophy and a theory of learning. The key concept of constructivism is that learning is an active process of creating, rather than acquiring, knowledge. Many educational psychologists were more concerned with what was going on inside the human brain than how to

get in. Dewey (1916), Piaget (1973), Vygotsky (1978, 1978) and Bruner (1996) each proposed that learners could learn actively and construct new knowledge based on their prior knowledge. In these perspectives, the role of the instructor is to facilitate Ornstein and Hunkins (1998). For Dewey (1916) a situation represents the experience of the environment affecting the learner and the interaction that takes place between the learner and his or her environment. Knowledge is therefore based on active experience. However, Piaget and Dewey believed that the educator's role involved the shaping of the learner's real experience of the environment and knowledge that surroundings tend to promote through experience that leads to growth, Ornstein, and Hunkins (1998).Dewey, (1916) considered that the main function of education was to improve the reasoning process.
He also recommended the adapting of his problem-solving method in many subjects.

A student who is not really motivated will not perceive a problem, so problems selected for the study should be derived from learner's interest Ornstein and Hunkins, (1998). Therefore, the methods of constructivism emphasized the development of the learner's ability to solve real-life problems. As a result, the problem-solving and free discovery came together. In other words, knowledge is dynamic and is built around the process of discovery Dewey (1916). Dewey considered the teacher as the guide rather than a director since learning allowed for creative interaction with the teacher rather than with outcomes - based teaching. Vygotsky emphasized socio-cultural context (human interaction) and its impact on what is learned Vygotsky (1978) his theory is known as "social constructivism" in review of this emphasis , which is particularly expressed in the thesis that learning is

not passive in the sense that learners are passive reacceptance of knowledge, but are actively engaged at all times in a process of constructing knowledge from what is received through the senses .It follows education based on this principle is naturally learner-centered, while the instructor plays an advising and facilitating role. Learners should be allowed to construct knowledge rather than being given knowledge through instruction Duffy and Cunningham (1996).

The major emphasis of constructivists is situated learning, which conceives learning as contextual. Learning activities that allow learners to contextualize the information should be used in online instruction. If the information has to be applied in many contexts, then learning strategies that promote multi-contextual learning should be used to make sure that learners can indeed apply the information broadly. Learning is moving away from one-way instruction to construction and discovery of knowledge Tapscott, (1998).

Epstein, (2002) asserts that there are nine general principles of learning that are derived from constructivism:

(1) Learning is an active process in which the learner constructs meaning from sensory input.

(2) People learn to learn as they learn. Learning consists both of constructing meaning and constructing systems of meaning.

(3) Physical actions and hands-on experience may be necessary for learning, especially for children. More particularly activities need to be provided that engage the mind as well as the hand. Dewey called this reflective activity.

(4) Learning involves language: the language that we use influences our learning. Vygotsky, a psychologist who constructed substantially to the theory of constructivism, argued that language and learning are inseparable.
(5) Learning is a social activity: our learning is intimately associated with our connection with other human being e.g. teachers, peers, family, and casual acquaintances.

Dewey pointed out that most of the traditional learning are directed toward isolating the learner from social interaction, and towards seeing education as a one-on-one relationship between the learner and the objective material being learned.
(6) Learning is contextual: we learn in relationship to what else we know, what we believe, our prejudices and our fears.
(7) One needs the knowledge to learn: it is not possible to absorb new knowledge without having some structure developed from previous knowledge to build on. The more we know, the more we learn.
(8) Learning is not instantaneous: it takes time. For significant learning, we need to revisit ideas, ponder them, try them out, play with them, and use them.
(9) The key component to learning is motivation (Epstein, 2002).

2.3.3 Situated learning Theory

Situated learning refers to learning within an authentic context and culture. It emphasizes that learning is not merely acquiring knowledge by individuals but through a process of social participation. The situation is of important effect on the learning process (Brown, etal 1989). One strand of situated learning paradigm that is particularly relevant to mobile learning is context-aware learning. Because mobile devices are portable and available in

different contexts, learning activities can be well enhanced by those contexts (Naismith et al., 2004). Taking the museum and gallery sector as a representative example, visitors can access additional information about displays and exhibits depending on their location. Situated learning paradigm depends on social context and social participant. It focuses on activities like authentic domain activity, situated mentoring, workplace learning (Keskin and Metcalf, 2011).

2.3.4 Collaborated Learning Theory

Collaborated learning experiences are initiated as a learning process with proper social interaction (Naismith et al., 2004). The increasing availability of wireless networks in personal devices not only makes it much easier to communicate and share data, files and messages with partners but also makes learning collaboration easier to initiate and to respond to. Taking the recent popularity of open source software into account, learning collaboration to a large extent seems to be more self-initiated and socialized.

2.3.5 Informal and lifelong learning theories

Informal and lifelong learning focuses on the learning activities that take place outside a dedicated learning environment, such as a predetermined curriculum (Naismith et al., 2004). In addition, informal and lifelong learning paradigm refers to activities that support learning outside a dedicated learning environment and formal curriculum (Naismith et al., 2004) Informal learning can be intentional with intensive and deliberate learning efforts, or it can be accidental, such as through TV, newspapers and conversations (Naismith et al., 2004). To the degree that mobile devices facilitate instant information acquisition in a seamless and unobtrusive way, mobile learning is in particular suited to promote informal and lifelong learning experience.

In essence, different learning theories seek to offer different mobile learning experiences and picture mobile learning from different aspects. It is the inherent nature of mobile learning that lends itself well to motivate learners intrinsically by offering versatile learning experiences. Hence, these learning experiences should be integrated and combined instead of being separated. (Naismith et al, 2004) states that, the introduction of these theories into mobile learning contexts makes an apparent contribution to the field, which offers a number of practical insights about how mobile learning can be implemented into people‘s learning activities. However, these learning theories simply focus on explaining how learning happens, while the learning activities suggested by those learning theories take place regardless of technological environment surrounded. Accordingly, these learning theories are not pertaining to mobile learning and fail to represent the unique nature of mobile learning as well. Further, built upon a summarization of current mobile learning projects, (Herrington and Herrington, 2007) argued that current mobile learning applications are predominantly developed with a didactic, teacher-centered paradigm. In a contradictory manner, mobile learning is widely described as a learner-centered approach (e.g. Naismith et al., 2004; Moses, 2008).

The long dearth of proper theoretical underpinnings in mobile learning research has been identified by many researchers (e.g. Sharples et al., 2005; Muyinda, 2007). Regarding this challenge, (Sharples et al, 2005) proposed a list of criteria against which a new mobile learning theory could be tested. These criteria also offer an important foundation for developing a new theoretical underpinning for mobile learning research, which*:*

"Is it significantly different from current theories of the classroom, workplace or lifelong learning?

Does it account for the mobility of learners?

Does it cover both formal and informal learning?

Does it theorize learning as a constructive and social process?

Does it analyze learning as a personal and situated activity mediated by technology?" (Sharples et al., 2005, pp. 4)

2.3.6 Learning and Teaching Support

Lastly, the use of mobile technology provides learning and teaching support for coordinating learners and learning activity resources and for assisting with administration duties more generally. Examples include helping teachers for attendance reporting, reviewing student marks, or effective personal organization (Naismith et al., 2004). These functions lead to positive rewards and could support learning activities as a whole.

2.3.7 Self-Directed Learning Theory

In light of the lack of theoretical underpinnings, self-directed learning theory is introduced here. The purpose of this is to offer an alternative theoretical underpinning for mobile learning research, which also helps to explain learners' acceptance of mobile learning.

The self-directed learning (SDL) theory is a theory that has long been stressed and applied in problem-based, lifelong and distance learning settings (Fisher et al., 2001; Stewart, 2007). SDL can be defined in two general ways: (a) as a process of learning (Garrison, 1997; Grow, 1991), and as a personal attribute (Guglielmino et al., 1996; Oddi, 1987). In its broadest meaning, ―self-directed learning describes a process in which individuals take the initiative, with or without the help of others, in diagnosing their

learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes (Knowles, 1975, pp. 18).

A number of key statements describing key features of pedagogy, andragogy, self-directed learning theory and mobile learning are summarized here, which will help to depict a picture of the relationships among them. The practice of pedagogy is teacher-centered while andragogy is learner-centered, with the role of the teacher primarily as a facilitator (Choy and Delahaye, 2002). Andragogy describes the instructional approach based on SDL theory while pedagogy describes the traditional instructional approach based on teacher directed learning theory (Knowles, 1975) .SDL capability is closely related to distance and lifelong learning activities (Fischer and Scharff, 1998), in particular when learners are placed in a physical and social separation from both the instructor and peer learners (Long, 1998).

"Mobile learning is expected to initiate a sort of —highly situated, personal, collaborative and long term; in other words, truly learner-centred learning" (Naismith et al., 2004, pp. 36).

SDL theory has been widely applied in distance and e-learning research. As mobile learning is illustrated as a new stage of distance learning and e-learning (e.g. Georgiev et al., 2004), or a paradigm shift from e-learning and distance learning (Sharma and Kitchens, 2004), SDL theory should be applicable to mobile learning as well. Note that mobile learning is a personal issue typically initiated in an unstructured environment. In particular for mobile learners, mobile learning activities are mostly initiated in a mobile

environment in which learners are separated from teachers and peer students. This fits well with the contexts of using SLD theory.

Furthermore, SDL theory suggests that the level of control that learners are willing to take over their own learning will rely on their attitude, abilities and personality characteristics (Fisher et al., 2001). A common target for SDL study is to aid individual learners to develop the requisite skills for engaging in self-directed learning such as planning, monitoring, and evaluating their own learning (Reio and Davis, 2005), which are also important capabilities to achieve positive mobile learning outcomes.

2.4 Diffusion of Innovation

Implementing a new idea, process or product can be challenging, and even more, challenging is encouraging individuals and organizations to quickly implement the innovation. (Roger's, 2010) Diffusion of the Innovations (DI) theory was explored to better understand these challenges. Roger's DI theory explains social change

"*Which is "one of the most fundamental human processes. Diffusion is defined by the DI theory as "the process by which (1) an innovation is (2) communicated through certain channels (3) over time (4) among the members of a social system" (p. 11).*

2.4.1 The Stages of Using Innovative Applications of Technology

There are a number of important adoption models. I will focus on two of the most important works in the field. Rogers (2003, p.169) *"Formulated the innovation-decision process theory according to which there are five distinct stages to the process of diffusion:*

- ***Knowledge****: is created when an individual learner of the existence of an innovation becomes familiar with how it works.*
- ***Persuasion****: This happens when a person becomes favorably disposed to an innovation.*
- ***Decision****: A process evidenced in activities that lead to a choice to adopt or reject an innovation.*
- ***Implementation****: This happens when someone starts making use of an innovation.*
- ***Confirmation****: support for a decision to introduce an introduction, or support for the reversal of such decision as a result of the conflict. ” Rogers* (2003, p.169)

Rogers Diffusion of Innovation Theory

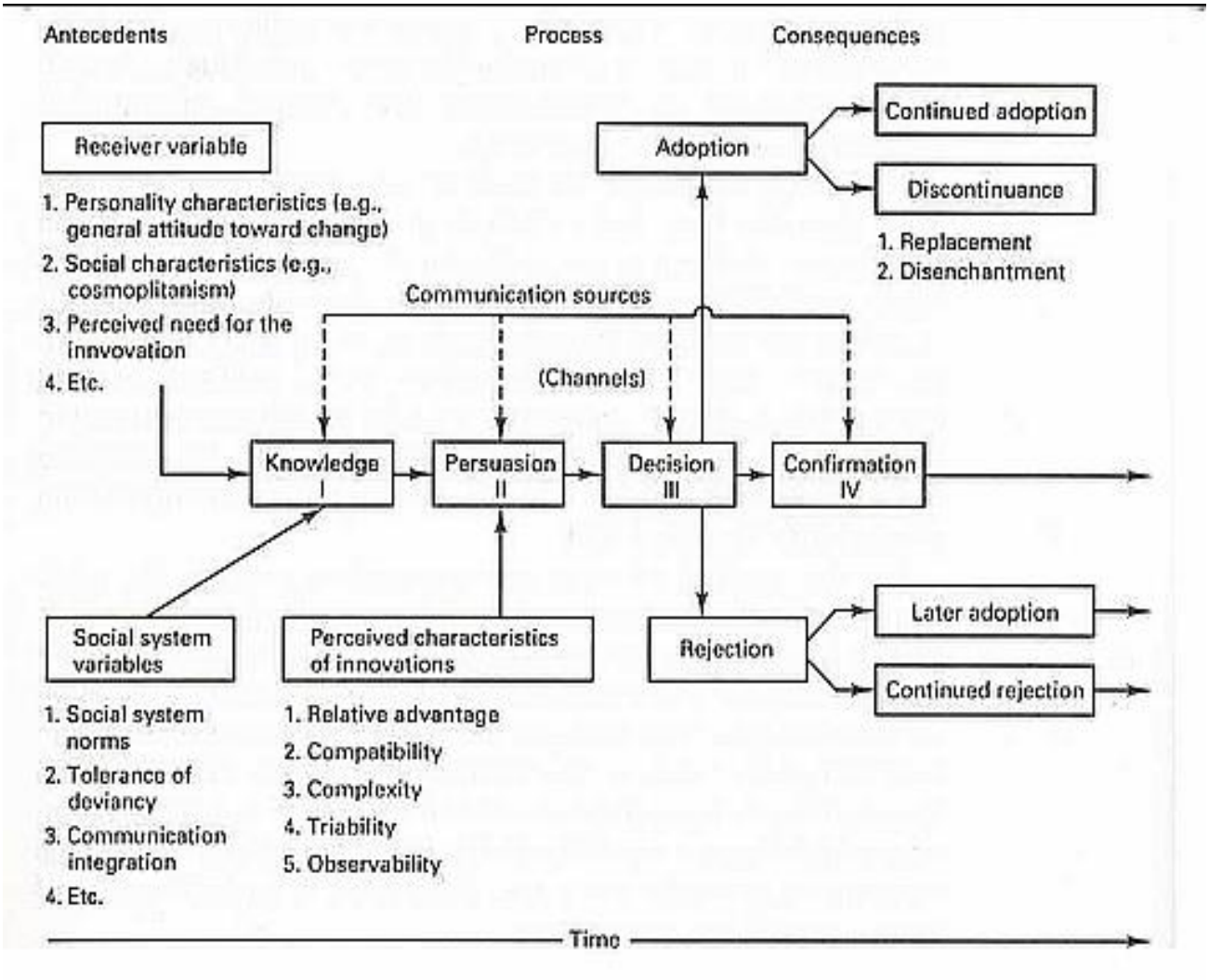

Figure 2-2: Illustrated from Rogers Diffusion of Innovation Model: Rogers (2003).

Rogers (2003) diffusion of innovation theory, centered on the conditions which increase or decrease the likelihood that a new idea, practice, or product would be adopted by members of a given culture. Rogers defined diffusion as "the process by which an innovation is communicated through certain channels over a period of time among the members of a social system."

Rogers (2005) in this theory and research study suggests that over time, the social system, the opinions, needs, and perceptions of the potential adopters are primary forces that influence adoption.

The concerns-Based Adoption Model of Hall and Loucks (1979) is useful in explaining the lack of teacher investment in innovations and describes the seven levels of concern that teachers experience as they adopt a new practice:

- **Awareness.** Teachers are relatively uncommitted to or uninvolved with the innovation.
- **Informational.** Teachers have a general interest in the innovation and would like to know more about it.
- **Personal.** Teachers want to learn about the personal ramifications of the innovation. They question how the innovation will affect them.
- **Management.** Teachers learn the processes and tasks of the innovation. They focus on information and resources.
- **Consequence.** Teachers focus on the innovation's impact on students.
- **Collaboration.** Teachers co-operate with other teachers in implementing the innovation.
- **Refocusing.** Teachers consider the benefits of the innovation and think of additional alternatives that might work even better.

2.4.2 Innovativeness and adoption categories

For the learner to adopt the new ideas there are five categories needed to be aware bout

Rogers (2003, p. 267) states that

"the individuals in a social system do not all adopt an innovation at the same time. Rather, they adopt in an overtime sequence, so that individuals can be classified into adopter categories on the basis of when they first begin using a new idea."

Figure: 2 shows the normal frequent distribution divided into five categories in which the author used two statistic, mean and standard deviation to divide a normal adapter distribution into five categories. Vertical lines are drawn to make of the standard deviation on either side of the mean so that the normal curve is divided into categories with the standardized percentage of the respondent in each category. The five adopter categories are (1) Innovators (2) Early Adopters (3) Early Majority (4) Late Majority (5) Laggards**.** These five adopter categories and approximate percentage of individuals included in each are located on the normal adapter distribution in the figure. The area lying to the left f the mean time of adoption (of an innovation) minus two standards deviation" Rogers (2003, p. 267)

Rogers (2003) in his individual innovativeness theory suggests that individuals react differently to change based on a stable trait or predisposition. He has developed a classification scheme of potential adopters based on their receptivity. The figure below can be used to shows how teachers react differently to e-learning as a new innovation.

Here are the main characteristics and values of each adopter categories according to Rogers,(2003) this classification of adopter categories will help to understand why some teachers response an early to e-learning innovations

while other resistance and to some extents it helps to identify characteristic of teachers who contribute to e-learning readiness.

- **Innovators** - the risk takers willing to take the initiative and time to try something new.

In more details their interest in new ideas leads them to out of a local circle of peer networks and into more cosmopolite social relationships and enjoy with communication patterns and friendship among a clique of innovators. “Being an innovator has several prerequisites."

The ability to understand and apply complex technical knowledge is also needed. The innovator must be able to cope with a high degree of uncertainty about an innovation at the time he or she adopts. The innovator must also be willing to accept an occasional setback when a new proves unsuccessful, as inevitably happens.” Rogers (2003, p. 282).

- **Early Adopters** –“are a more integrated part of the local social system than are innovators. Early adopters are considered by many to be “individual to check with” before adopting a new idea. This adapter category is generally sought by change agents as a local missionary for speeding the diffusion process. They are tending to be respected group leaders, the individuals essential to adoption by the whole group”, Rogers (2003, p. 283).
- **Early Majority** – adopt the new ideas just before the average member of a system. The early majority interacts frequently with their peers but seldom hold positions of leadership in a system. The early majority characterize by careful, safe, deliberate individuals unwilling to risk time or other resources.

- **Late Majority** – "adopt the new ideas just after the average member of a system. Those suspect of or resistant to change. Hard to move without significant influence" Rogers, (2003, p. 283).
- **Laggards** – "are the last in a social system to adopt an innovation. They possess almost no opinion leadership. They are near isolates in the social system. These are those who are consistent or even adamant in resisting change. The pressure needed to force change" Rogers (2003, p. 284).

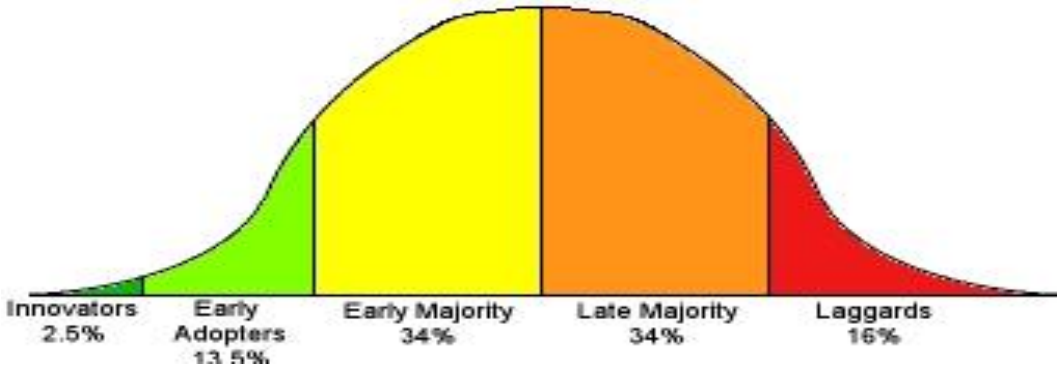

Figure 2-3 the relationship between the types of adapters divided by innovativeness and their place on the adaptation curve Rogers (2003, p.281).

There are many models describing teachers and the adoption of technological innovations. According to Rogers (1986) the ways in which adoption of ICT differs from other types of innovations are as follows:

1. A critical mass of adopters is needed to convince the majority of other teachers of the utility of the technology.

2. To ensure the success of the adoption and diffusion regular and repeated use is necessary.
3. Information and communication technologies can be used in a variety of ways and adoption is part of a process that involves significant evolution on the part of the adopters.

Research conducted by Apple Computer in the Apple Classroom of Tomorrow (ACTO) cited that teachers pass through several stages as they integrate technologies into the educational environment Dwyer, Ringstaff, and Sandholtz (1991).The model contains five stages--Entry, Adoption, Adaptation, Appropriation, and Invention.

Entry - teachers struggle to cope with and establish order in the transformed classroom

Adoption - the beginning of adoption into the traditional classroom

Adaptation - while traditional teaching methods still predominate, but now supported with technology.

Appropriation - with increasing confidence teachers become confident and pedagogically innovative.

Invention - creativity including active experimentation by teachers and students.

2.4.3 Ely's Eight Conditions of Change

Donald P. Ely is one of the few authors who have done extensive research into the implementation of instructional innovations. His research (1990, 1999) has shown that the existence of certain conditions tends to facilitate the teachers implementation of an innovation. These conditions are:

1) **Dissatisfaction with the status quo:** an emotional discomfort that results from perceiving the current method as inefficient or ineffective. This condition does not have as much influence as the other seven (Ely 1990, 1999).

2) **Knowledge and Skills:** an assessment of the current level of skills and knowledge of the product users. Ely reports that this condition consistently ranks as one of the most influential conditions among the eight Ely (1990, 1999).

3) **Adequate Resources:** the amount of resources currently available to successfully implement the innovation. Resources include finances, hardware, software, and personnel Ely (1990, 1999).

4) **Time:** adequate time and compensated time for users to become educated and skilled in how to use the innovation. This condition refers not only to the organization's willingness to provide time but the users' willingness to devote learning time for implementation Ely (1990, 1999).

5) **Rewards or Incentives:** the existence of incentives that motivate users to employ the innovation or rewards provided by the organization for those who do use the innovation (Ely, 1990, 1999).

6) **Participation:** the involvement of key stakeholders in decisions that relate to the planning and design of the innovation. The condition refers to all stakeholders but emphasizes the participation of product users Ely (1990, 1999).

7) **Commitment:** the perception by users that the powerbrokers of the organization (i.e. Presidents, CEO, Vice-Presidents) actively support the implementation of the innovation Ely (1990, 1999).

8) **Leadership:** an active involvement by immediate supervisors in assisting the users in implementing the innovation Ely (1990, 1999).

2.4.4 Innovation and English language learners

According to Warschauer, (2004), the innovative growth and fast spread of the ICTs have caused ten vital shifts in our daily lives associated with computer-assisted language learning: a change (The first important change) from phone-based to wireless communication, (A second change) from dial-up Internet connections to permanent, direct online connections, (A third change) from the use of mainly personal computers to the use of portable computing and online devices (e.g., laptops, personal digital assistances and cell phones), ((A fourth change) from narrowband to broadband, (A fifth change) from expensive personal computing systems to widely affordable computers and other hardware, (A sixth change) from seeing the Internet as an exclusive form of communication and information to viewing it as a figure form of communication accessible to the world, (A seventh change) from text-based information and communication to audiovisual forms of information and communication, (A eighth change) from use of English as the main online language to multilingual Internet use, (A ninth change) from non-native to native users of information technology (e.g., children growing up with digital media and having native-like fluency in online communication), and (A tenth change) from the language laboratory to the classroom as a result of making computers and wireless access available almost everywhere.

According to Warschauer, (2000b) these shifts and developments of ICT have brought five major changes in the English language teaching

1. These developments of ICT are important factors helping to change

the entire contexts of English teaching,

2. The emergence of important new literacies,
3. The importance of teaching new types of writing through electronic communication can also be illustrated by a situation that occurred in an ESL writing course (Warschauer, 1999),
4. The increased importance of online communication is also contributing to new kinds of identities,
5. The progress of CALL has been based on evolution from the mainframe computer to the personal computer to the networked, multimedia computer, and corresponding changes have occurred in CALL-based pedagogy in the field of English language teaching (Warschauer, 2000b).

That is to say, recent technological revolution allows both language learners and teachers to have

"Multi-tasking experiences, involving in its fullest form four modes: listening, speaking, reading and writing" (Crystal, 2004, p. 93).

Learners of English as a foreign language have had opportunities to practice English and engage with authentic real-world contexts of language use by making the most of new emerging technologies (Kramsch and Thorne, 2002).

2.5 Technology Acceptance Model (TAM)

2.5.1 Perceived ease of use

Several researchers have followed Davis's original study (Davis, 1989) to provide empirical evidence on the relationships that exist between usefulness, ease of use and system use.

Davis defined Perceived ease of use as "the degree to which a person believes that using a particular system would be free from effort"(Davis, 1989). According to Sathya, 1999; Rogers, and Shoemaker (1999), consumers go through “a process of knowledge, persuasion, decision and confirmation” before they are ready to adopt a product or service.

The adoption or rejection of an innovation begins when “the consumer becomes aware of the product” (Sathye, 1999; Rogers and Shoemaker, 1971). As mentioned by Cooper, and Zmud, (1997) ease of use of an innovation is one the most important characteristics for the adoption of an innovation. Adoption of mobile learning is more likely to occur if the process of usage is easy for customers.

2.5.2 Perceived usefulness

Perceived Usefulness was defined as ‘‘the degree to which a person believes that using a particular system would enhance his/her job performance’’ (Davis, 1989, p. 82).

People can assess the results of their behavior in terms of perceived usefulness and build their choice of behavior on the desirability of the perceived usefulness. Consequently, perceived usefulness will affect their intention to accept and adopt mobile learning, through direct or indirect ways. Many studies have offer support for the proposal that perceived usefulness is the main predictor of information technology usage (Davis, 1989; Davis et al., 1992; Venkatesh and Davis, 2000; Gefen, 2003; Hsu and Lu, 2004).

2.5.3 Perceived risk

Perceived risk as defined by Pavlou, (2001), *"It is the user's subjective expectation of suffering a loss in pursuit of the desired outcome".*

The term perceived risk (PR) in this study can be looked at from the learner's perception of the uncertainty and unsafely results of learning English language using mobile technologies. However, introducing a new technology may bring both benefits and risks to the user, and before deciding to adopt the technology, the learner may want to weigh risks and benefits. Mobile learning services will not be an exception to this general rule. A larger perception of risk may decrease the perceived advantage of the technology (Horst, Kuttschreuter, and Gutteling, 2007).

2.5.4 Social Influence

Venkatesh et al., (2003) defined social influence as the level to which a person perceives that essential others believe he/she should exercise the technology. Subjective norm refers to social pressure to use (or refrain from using) a technology. It results from an agreed-upon understanding of what constitutes acceptable behavior (normative beliefs), and a person's degree of motivation to comply with those beliefs (Davis, Bagozzi, and Warshaw, 1989). Subjective Norm was not part of the original Technology Acceptance Model but was added later to help explain the influence that coworkers and other employees have on the behavior of an individual.

According to Venkatesh (2000), Subjective Norm also influences intention indirectly through perceived usefulness in voluntary compliance implementations. That is, the usefulness of a given technology is influenced

in part by how it is generally perceived by others. The researcher in this study would expect that when the technology is perceived by relevant others to be useful, the English language learner is more likely to use the technology and to judge it as useful.

2.6 M-learning and E- learning

2.6.1 The Relationship Between m-learning and E- learning

The literature review identified some differences between E-learning and M-learning regarding technology, learner access and mode of communication. Moreover, some comparisons involve distance learning (Distance -learning) (Brown, 2003; Georgiev et al., 2004). Gerogiev et al. (2004) anticipated M-learning to be a subsection of E-learning, as shown in Figure 2.2, where E-learning is a subset of Distance-learning. Therefore, any M-learning activity is an e-learning activity, and any E-learning activity is, in turn, a Distance -learning activity.

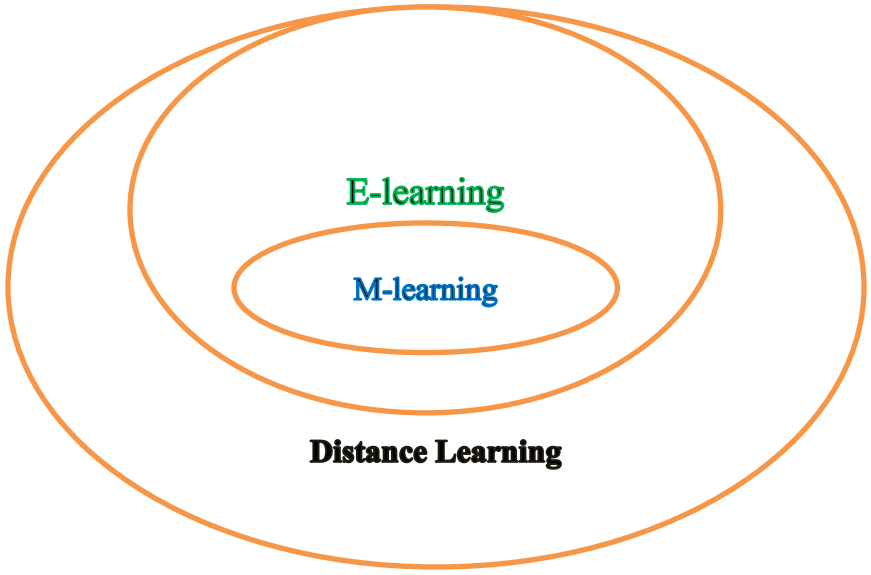

Figure 2.4 the place of M-learning as part of E-learning and Distance-learning.

Brown (2003) proposed a diagram for flexible learning showing the relationship between Mobile-learning, online learning, and E-learning within the wide context of distance learning and flexible learning as shown in figure 2:2

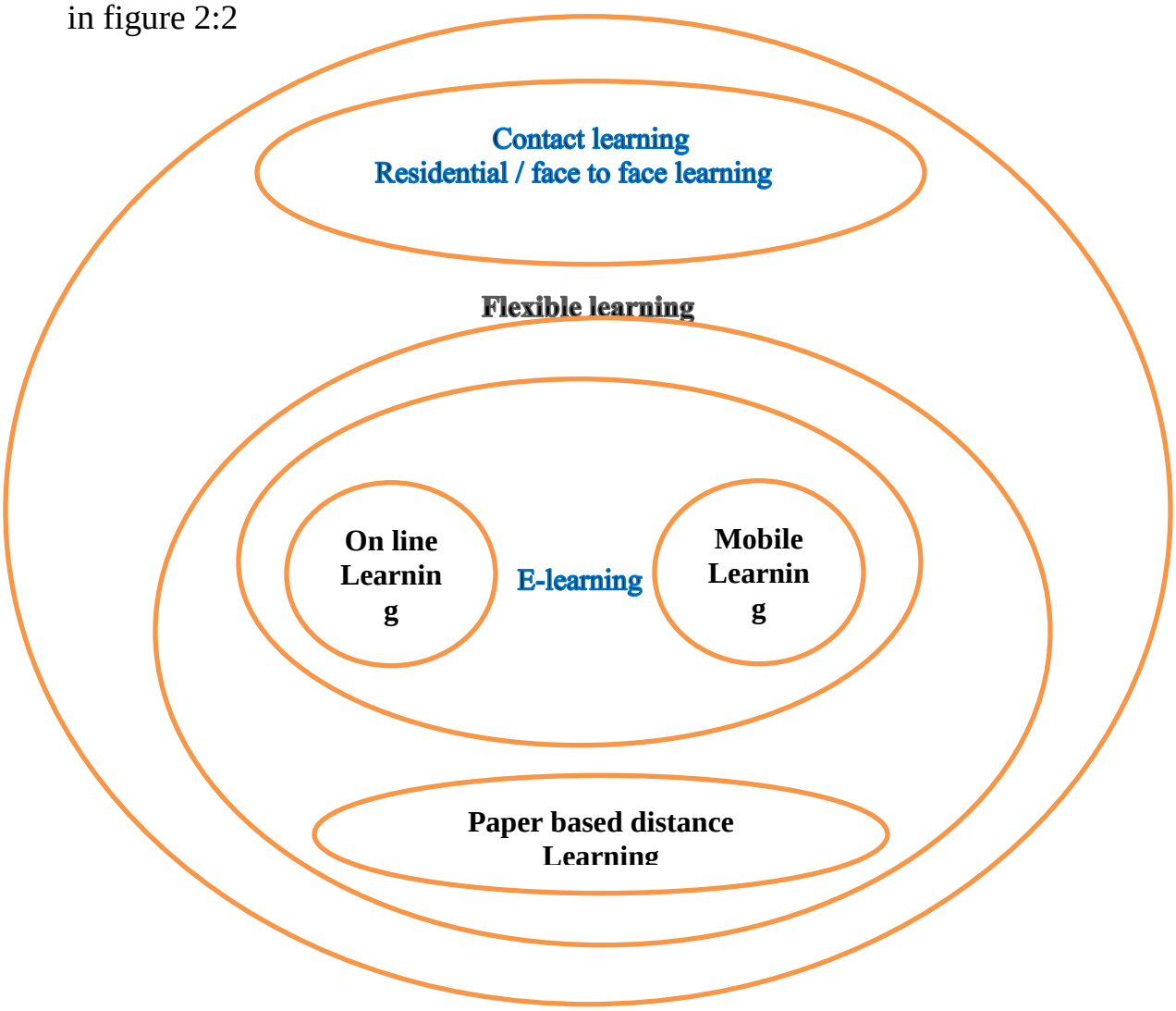

Figure 2.5: The subset of flexible learning (Brown, 2003)

Figure 2.2 shows that E-learning is a subset of Distance learning, and Mobile -learning and online learning are subsets of E-learning. However, there is no intersection between mobile -learning and online learning.

This means that these are unrelated parts of E-learning. Moreover, the figure states that E-learning is a subset of distance learning, but not a subset of face-to-face learning. Khaddage, Lanham and Zhow (2009) observed that although this assumption was generally true for many learning environments in the past, M-learning can now provide location awareness and allow access to learning contents anytime, anywhere. In addition, Martin (2011) explained that this diagram excludes opportunities of blended learning; students can use mobile devices while they are in face-to-face class (i.e. use face-to-face learning blended with M-learning simultaneously).

Peter (2007) contradicted the view of M-learning being a subset of E-learning. He suggested the „just enough, just in time, just for me" model of flexible learning. Figure 2.3 explains the model which shows that E-learning and M-learning are both subsets of flexible learning. Although there is a cross area between E-learning and M-learning, the latter is not fully a subset of the first as there is an M-learning area located beyond the boundary of E-learning. This means that E-learning does not always consist of M-learning aspects.

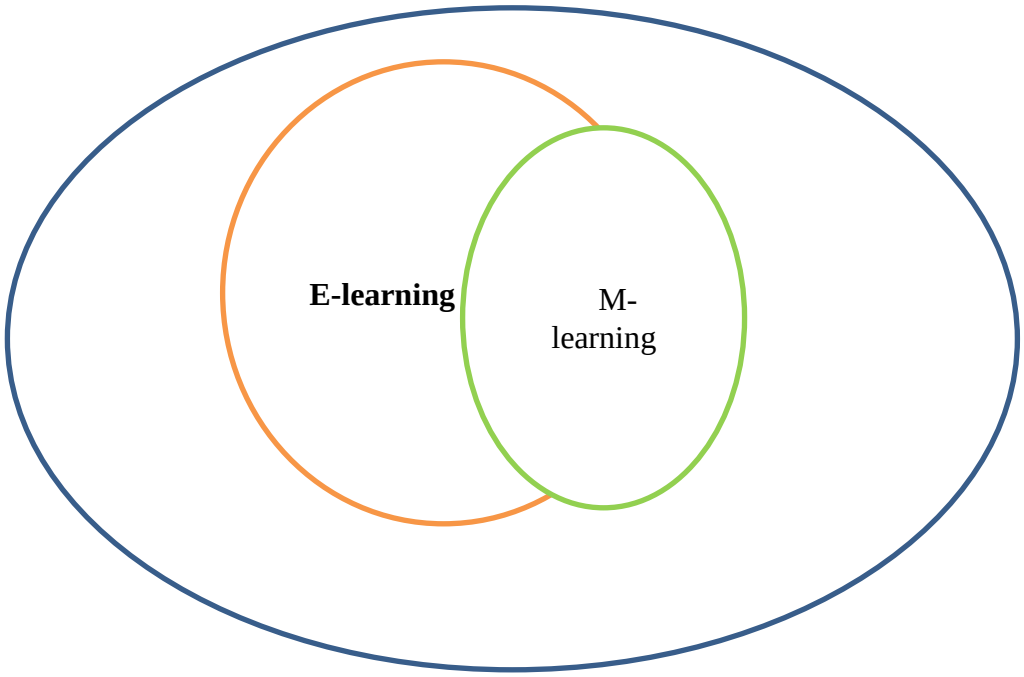

Figure 2.6:The'just enough, just intime,just for me'model of flexible learning(Peter, 2007)

2.6.2 Terminology Comparisons Between m-learning and E-learning.

According to (Traxler,2005) e-learning involves the using of PC and laptop, while mobile learning is primarily delivered by SMS, MMS, PDA, and smartphone, However, the boundary between mobile learning and e-learning is not that clear, since some devices, such as tablet PC and netbook are hard to be located on either side.

Table 2.1 Comparison between e-learning and Mobile learning

E-learning	**M-learning**
Computer	Mobile
Bandwidth	GPRS, G3, Bluetooth
Multimedia	Objects
Interactive	Spontaneous
Collaborative	Networked
media-rich	Lightweight
distance learning	situated learning
more formal	Informal
simulated situation	realistic situation

hyper learning	constructivism, situationism, and collaborative(Sharma & Kitchens, 2004)

Table 2.2 Comparison in the context of learning experience

E-learning	**M-learning**
Spontaneous Situated Portable context-aware Lightweight Informal Personal	Intelligent Personalized Interactive media-rich Structured Institutional Multimedia Usable Massive hyper-linked Accessible Connected

2.6.3 Dimensions and Characteristics of Mobile Learning

For quite some time now, universities across the country have used educational technologies to enhance their curriculums (Bakia et al., 2007). When used appropriately, mobile technologies have been shown to "enrich learning environments and enhance students' conceptual understanding" (Bakia et al., 2007, p. 9). Mobile learning can add value and enrich existing learning models; however, the probability that learning on mobile devices will replace classroom or other electronic learning approaches is rather far-fetched (Mottiwalla, 2007).

Over time, learning and technology has advanced, which has set the stage for the successful merging of learning and technology in a mobile format (Sharples, 2000). But to maximize learning chances as a result of this convergence of learning and technology, teachers must become familiar and aware of a new digital language possessed by their students (Corbeil & Valdes-Corbeil, 2007). While teachers are trying to come to grips with the technical skills of their students, students must also learn to craft their own learning and educational experiences outside the classroom environment with the assistance of the Internet and/or mobile technologies to develop the necessary 21st-century skills required to survive in today's and upcoming society.

Ozdemir, (2010) describes mobile devices as technologies that are with us whenever and wherever we are. People cannot be expected to carry distance learning items, such as a radio, television, or computer, with them at all times. Furthermore, the radio and the television only allow for one-way

communication, which hinders the interactions that are inherent in a typical learning environment between the teacher and student. Characteristics that make mobile learning unique and effective are the personalization of learning and the capability of these devices to extend beyond the traditional modes of education. As a result, mobile devices have the potential to change the way in which students conduct themselves and interact with one another (Motiwalla, 2005).

Mobile learning does not necessarily take place in a fixed location, such as a classroom, over a scheduled amount of time; instead, learning runs across locations, topics, and technologies (Sharples et al., 2008). The use of mobile or handheld devices for learning offers a learner with global access to information and remote resources (Liaw, Hatala, & Huang, 2010). This ubiquitous access to information and resources has some compelling implications for informal learning due to the fact that students can use mobile devices to peruse the information in substantially less time with greater efficiency than ever before. The opportunity for unintentional learning (i.e., learning that was not planned ahead of time) is also much more likely with a powerful handheld tool that can retrieve information from the Internet, through applications, and through collaboration and communication among classmates, friends, family, or even social networks (i.e., Facebook). When removed from the context of a formal, externally imposed learning environment, informal learners predominantly take advantage of technologies, resources, or tools that best suit their learning needs and personal preferences (Clough et al., 2008).

In the palm of her hand, a cell phone user, an iPad user, or even a netbook user has instant access to the Internet and other educational resources. Learning opportunities continue to present themselves just about anywhere one goes. With this in mind, the mobility of the learner and the use of a mobile device by the learner should not take away from the fact that actual learning may be taking place. Liaw, Hatala, and Huang (2010) suggest that learning as a mobile activity should not be portrayed separately from other forms of education. Mobile learning can be characterized by the personal and public processes of the acquisition of knowledge through exploration and conversation with the assistance of various interactive technologies (Sharples et al., 2008). To make meaning of concepts, students predominantly use the processes of conversation (Pask, 1976) and exploration (Dewey, 1916).

Mobile learning provides an opportunity that allows students to communicate with each other to further improve their educational experiences inside and outside the classroom. In addition to communication, Sharples et al. (2008) contend that mobile learning draws upon the conception that knowledge is constructed through activity. Therefore, through conversation and exploration, people are able to learn where they want, when they want, and what they want. The informal learning opportunities that are created when using mobile devices allow learners to negotiate with content and subject matter they never may have planned or envisioned. The practice of mobile learning is composed of a tripartite system in which the learner, the technology, and the learning process itself operate in an

"uninterrupted continuum within the social context of education" (El-Hussein & Cronje, 2010, p. 17)

In this sense, Hussein and Cronje believe that the mobile learning environment is based on the mobility of learners, the mobility of technology, and the mobility of learning that broadens the scope of the educational landscape. As technology becomes more embedded in the daily lives of people, learners become more dependent on creating educational opportunities through social exchanges with the assistance of mobile devices. Moreover, the blending of the learner, the technology, and the learning process helps blur the definitive lines that once isolated these three events. Technology is being used ubiquitously by learners who have learned to create learning opportunities and to access information because of the mobility of the technology itself, the mobility of the learner, and the mobility of the learning process. The actual mobile devices that are being used by learners share a set of common characteristics: (a) portability, (b) social interactivity, (c) context sensitivity, (d) connectivity, and (e) individuality (Klopfer & Squire, 2008).

The devices are powerful and easily transportable. Communication and collaboration are facilitated with the use of mobile devices. Mobile devices are sensitive to the context in which they are used in the sense that the devices can take advantage of GPS, data networks, or even audio or video capture to collect and respond to data in a particular area. Connectivity provides the devices with the ability to connect to a network. Lastly, individuality paves the way for the users of the devices to tailor the devices to meet their specific needs. Handheld mobile devices are becoming more

relevant technologies to help support collaborative learning scenarios. Because of their potential for enhancing learning, mobile devices have undergone a number of studies by not only researchers but academic and industrial practitioners as well (Hoppe et al., 2003).

Mobile learning will now be referred to as a process of education for a learner positioned in any random location with the assistance of a handheld, portable device that can connect wirelessly to the Internet in an effort to support or extend classroom learning or create new, intentional or unintentional learning opportunities.

2.6.5 The Impact of mobile phones in Education

As mention by (Ellen D, (2005), Although tablets and laptops have provided the means and the methods for demonstrating that learning no longer needs to be classroom- or course-bound, the anticipated rush toward mobile learning will be sparked by the obvious draw of short, stand-alone programs. Current trends suggest that the following three areas are likely to lead the mobile movement: educational games, language instruction, and performance-support and decision-support tools. In particular, gaming has taken the wireless world by storm, and there is every reason to believe that educational gaming will provide mobile learning with its first big “win,” in terms of adoption. In a March 8, 2005, talk given at the Game Developers Conference (GDC) held in San Francisco, Robert Tercek, co-chairman of GDC Mobile, said that 6 million people download games to their mobile devices each month and that 18 million Americans play wireless games. He added that worldwide, there are 170 million wireless gamers.(Robert, 2005)

mentioned said this broad fascination with mobile gaming is mirrored in a growing interest in higher education developments in interactive game design curriculum, such as the program at Southern Methodist University. Mobile learning offers many rich opportunities for personalizing learning experiences: broad, comprehensive community wireless initiatives such as One Cleveland; rich field-based experiences such as those found at California State University–Monterey Bay; immersive museum enrichment experiences such as the Blanton Museum at the University of Texas– Austin; and campus-wide laptop initiatives such as at Winona State University. Increasingly, mobile learning will feature rich, dynamic portal applications such as those available to students attending the Wharton Business School at the University of Pennsylvania. (Ellen D, (2005)

According to the International Telecommunication Union (ITU, 2010), the share of total mobile subscriptions in the developing world increased by one-fifth between 2005 and 2010, to stand at 73%. In Africa, penetration rates were projected to reach an estimated 41% at the end of 2010 (compared to 76% globally) leaving a significant potential for growth. (Johnson et al., 2012) places mobile devices places as the best technology to watch for in the coming year, occupying the same level as electronic books, in the six featured technologies. And the market has a host of different mobile devices, operating systems, applications, and accessories – all with different capabilities, against a backdrop of issues relating to communication coverage, infrastructure, and equipment, bandwidth as well as usage costs. (Ellen, 2005)

As mentioned by (Sam, 2011), mobile devices were initially designed for

users with broadband connections in developed countries, but their impact on the developing world may well be even deeper due to the relative lack of access to books, and the ever-increasing popularity of mobile phones: it‘s getting hard to find a part of the world where kids don‘t have access to mobile phones, and with that, some kind of power supply to keep them recharged. Most importantly, e-books on mobile devices offer something that is customary to the teachers and the students. Teachers already know how to integrate books into their classrooms, and students already know how to use mobile phones. But what really adds value to this model is: now students can read not only the books that are required in their classrooms but get additional information and knowledge as and when required, even when they are reading it away from the classroom. A connected 24/7 teacher is now available with more information and knowledge than their human teacher.

As Pimienta, (2002) suggests, we need to view our students as being *“in front of a keyboard” rather than “behind a screen.”*

(Kamet. al., 2008), added that cell phones are increasingly adopted in the developing world and an increasing fraction of these phones feature multimedia capabilities for gaming and photos. These devices are a promising vehicle for out-of-school learning to complement formal schooling. In particular, they believe that learning English as a Second Language [ESL] by playing games on cell phones present an opportunity to dramatically expand the reach of English learning, by making it possible to acquire ESL in out-of-classroom settings that can be more convenient than the classroom.

2.6.6 Using Mobile Devices in the Classroom

According to Kukulska-Hulme (2007), the three main motivations for the use of mobile technology in education are improved accessibility to information, the potential for future changes in teaching and learning, and the goals and aims of businesses and institutions. When examining the changes in teaching and learning, "Researchers are interested in collaborative learning, students' appreciation of their own learning process, consolidation of learning, and ways of helping learners to see a subject differently than they would have without the use of mobile devices" (p. 4). When multimedia content is well-designed, a learner's cognition can be activated even if the content being studied is mundane or the learner is disinterested in that which is being taught. When efficiently designed, the result of multimedia on learning is a more meaningful, deeper level of understanding exhibited by the student (Ozdemir, 2010). Mobile learning systems and applications have consistently garnered positive praise among learners who contend that using handheld devices for learning increases the overall satisfaction and motivation of its users. Likewise, mobile learning has the potential to alter student behaviors, interactions, and overall attitudes toward learning (Homan & Wood, 2003). The significance of using mobile devices to create learning opportunities can be advantageous to students of all ages and academic achievement levels, especially as these students move on to tackle the imminent changes in the consistently evolving 21st century.

"Students need to leave school with a deeper understanding of school subjects, particularly science, mathematics, and technology, and with the skills needed to respond to an unbounded but uncertain 21st century skills to

use their knowledge to think critically, to collaborate, to communicate, to solve problems, to create, and to continue to learn". (Kozma, 2005.p 1).

2.6.7 Mobile learning, Currently and in the Future

Regardless of current disadvantages, the mobile learning will become increasingly popular with the progress of mobile devices. Its common use within the traditional education will accord to the needs of educational quality improvement. The educational process will become more versatile and will satisfy the demands of lifelong learning (Georgiev et al., 2004). Mobile learning is absolutely obtaining momentum (Pollara et al., 2011). The vast majority of research studies relating to mobile learning have yielded positive results in both achievement and attitudes (Pollara et al., 2011). Moreover, according to Pollara et al. (2011, p. 8),

"the need for ubiquitous learning opportunities is immediate."

The implications of mobile learning are far reaching, and its potential influence on education are profound (Group, 2004). The following years will witness a period of swift growth for mobile learning, with evolutionary rather than revolutionary alterations (Librarian, 2007). The Commission of the European Communities announced that it was planning Europe's "digital future" via the identification of strategic challenges for competitiveness and ICT take-up in Europe (Kukulska-Hulme, Sharples, Milrad, Arnedillo & Vavoula, 2011). It is crucial that education embraces this new technology and develops pedagogies to foster and enrich learning with the use of mobile devices. Since smartphones become increasingly ubiquitous and capabilities rise up, the need for real-time communication and access to learning materials will ascend and modern education must meet the challenge

(Pollara et al., 2011). Researchers in mobile learning will be keen to address the current challenges ascending from the technical advancements and from learner activities in multiple virtual and informal learning environments. This will request a blend of technical, educational and sociological expertise to be able to make sense of, and shed lights on the mobile learning (Kukulska-Hulme, et al., 2011).

In the language learning field, mobile learning was predicted to be one of the top trends in 2011 (Brink, 2011). Along with the advancements in new technologies and the wide availability and use of mobile device, especially those that are web-enabled, mobile learning will realize its full potential in the near future (Brink, 2011). Nevertheless, how will mobile learn progress at a rapid speed? According to Brink (2011), advanced mobile platforms and emerging technologies, for example, HTML5, cloud computing, and online gaming will enable people to easily access the interactive and engaging content. HTML5 will decrease the need for flash-based content on mobile devices while cloud computing can flatten the app industry so that materials can be created once and then accessed by any device. The challenges for the educators and technology developers will be to search for ways to make sure that mobile learning is highly situated, personal, collaborative and long term, offering a truly learner-centered learning experience (Siff, 2006). Considering the facts presented above, in order to prepare for implementing mobile learning in Sudanese universities, it is essential to understand the end-users' acceptance of mobile learning. In this thesis, the researcher study students' attitudes of mobile learning in three Sudanese universities.

2.6.8 Ways to Implement Mobile Pedagogy

There are many ways that help learners to implement mobile in English Langauge learning process.

Table 2.3 Illustrated from (Kukulska et al., 2015 p. 13, 14, 15)

features of mobile pedagogy for language learning and teaching	**How teachers can enable mobile pedagogy for language learning and teaching**
Learning is mobile, situated, contingent, context-aware, and authentic. Learning happens both formally and informally, in and between classrooms, homes, transport and other spaces, and in communities extending beyond learners' immediate physical environments and networks. Classrooms may be 'flipped', or blended, combining face-to-face learning with online learning. Lessons start from learners. Language needs emerge and are focused on in a variety of ways with an emphasis on pair and group collaborative work, reflection and rehearsal. Learner autonomy and learner	1. Seek opportunities to guide, ask for and include learners' questions about language encountered informally or more formally outside class 2. Welcome a choice of response to language practice homework, inviting narrated and tagged images, or voice recordings as well as more traditional pen and paper tasks. 3. Give learners outside-class learning tasks that involve interacting with other English users (face-to-face or online. 1. Ask learners to record language practice activities in class and use these recordings collaboratively to help each other correct errors, and to research and reference grammar rules based on common problem areas.

training are important.	2. Mobile devices can capture samples of speech and write from learners working in class for later reflection and repair 3. Allow space and time for guided learner reflection on their own performance, choice of strategy and involvement in the process. 4. Encourage learners to record, discuss and document their insights, share their helpful language learning and technology strategies and practices and introduce new ones when needed.
Learning, knowledge and texts can be created, curated and constructed by learners for peers and teachers as well as selected by teachers.	1. Ask learners to make their own shared class multimedia dictionaries containing examples of new language chunks, definitions, illustrations, translations and recordings of their pronunciation. 2. Learners can be asked to research and post multimedia texts for each other to read and comment

	on.
Teaching and the use of technologies can be learner-led and involve multiple connections between learners and expert users anywhere.	1. Ask learners to select which tools they or you might use and reflect on their appropriacy. 2. Learners, as well as teachers, can share ideas for useful apps or web 2.0 tools to achieve the objectives of a task in or out of class. 3. Mobile social media such as Twitter or Facebook can be used as tools for seeking out answers and input from a wider community of English language users under discussion in class. 4. Two or three learners could be responsible for creating polls or collecting tweets in answer to a question posed at the end of a class, to be shared in a subsequent lesson. 5. A good thinking resource and ideas for exploiting web-based communication websites
An emphasis on language fluency and creativity with more open tasks (i.e. where many answers are	1. Rather than gap-fill or more traditional closed tasks, ask learners to create their own

possible) and cognition are encouraged and required. An iterative task design taking into account evolving learning needs as well as technologies	generative examples of how the language they have studied is used. For example, use digital storytelling, e-book creation or short video creation. 2. Look at teachers describing their own experiences in these video case studies.
Inclusion, accessibility, diversity and access (often made possible by means of mobile devices) are paramount	1. Ask learners to share language learning and homework tasks from class with absent or late learners by means of recordings and images. 2. Learners with a range of special needs can be helped by tools available on mobile devices. 3. Diversity and inclusion are also improved by providing learner choice of media. Collaborative group tasks involve different skills allowing learners to work more diversely.

2.6.9 Mobile Today

According to Ellen, (2005), a rich mobile Internet experience includes the following attributes:

■ Ubiquity: How widely available is the media player that will be required for the viewer to see the application on the device display?

■ Access: How widely available is the wireless network that will distribute the mobile content?

■ Richness: Do pages load quickly? Do animations play in a smooth and seamless manner? Does the streaming media (media that is consumed—read, heard, viewed—while it is being delivered) flow at a sufficiently rapid rate?

■ Efficiency: How large is the client that will be required to make use of a particular media player? How fast will the application load and play?

■ Flexibility: Will the application be viewable on a variety of devices? Can content designed for use with one kind of device or operating system be played on other devices with some expectation of comparable quality?

■ Security: Is the interactive mobile device protected from worms and viruses? Is the shared content protected from being intercepted by unintended recipients?

■ Reliability: Will content be displayed in a consistent manner, regardless of the browser, device, and screen size?

■ Interactivity: Does the application allow users to interact freely with the display and the content? Third, people want "anytime, anywhere" connections more than ever before. Demands for information, performance support, instruction, training, and education are being shaped by people who want access to resources, assets, program, and people when and where they

need those connections most. As more people gain greater comfort with simple mobile applications like SMS text-messaging and mobile Web-surfing, the greater will be the demand for broadband service. And as bandwidth increases and media players like Flash continue to improve users' experiences, the more rapidly will mobile applications continue to increase in number (Ellen, 2005).

2.7 The Benefits and Drawbacks of Mobile Learning

2.7.1 The Advantages of Mobile Learning

The information and communication technology tools such as smart phones, laptops PCs with the connection to wireless networks facilitate M-Learning. M-Learning can assist the instructors and learner and to extend beyond the traditional schoolrooms levels. Mobile devices offer instructors and learners and support them with new opportunities to interact with each other and offer them access to relevant information (Elias, 2011).

According to Crescente and Lee, (2011) the following are benefits of M-Learning:

- Anytime access to content.
- Anywhere access to content.
- Support distance learning.
- Can enhance student-centered learning.
- Support differentiation of student learning needs and personalized learning.
- Can enhance interaction between and among learners and instructors.
- Relatively inexpensive opportunities, as the cost of mobile devices are significantly less than PCs and laptops

- Multimedia content delivery and creation options
- Continuous and situated learning support
- Decrease in training costs
- Potentially a more rewarding learning experience
- Using the communication features of a mobile device as part of learning activity.

2.7.2 Critical Success Factors for Mobile Learning

Naismith and Corlett , (2006) identified five critical success factors for mobile learning These are: Firstly, Access to technology: The successful projects make mobile technology available where and when it is needed, either by developing for users' own devices such as phones and media players, or by providing learners with devices that they can use at home and on the move.

Secondly, Ownership: It is important that learners are able to either own the technology or to treat it as if they own it. Using the technology for entertainment and socializing does not appear to reduce its value as a tool for learning, but rather helps to bridge the gap between institutional and personal learning.

Thirdly, Connectivity: Many successful mobile learning projects have been based on wireless or mobile phone connectivity, to provide access to learning resources, to link people across contexts, and to allow students to capture material that can be sent to a personal media space and then shared or presented.

Fourthly, Integration: Successful mobile learning projects are integrated into the curriculum, the student experience, or to daily life, or a combination of all of these. One way to achieve this integration is to extend a successful form of learning onto mobile devices, such as Frequently Asked Questions, or audio/Powerpoint recordings of lectures. Another approach is to provide mobile technology that augments the student experience, for example by mobile tools such as 'moblogs' (mobile weblogs) to maintain an electronic portfolio or record of learning.

Fifthly, Institutional support: Although a major benefit of mobile technology is "the ability to put control in the hands of the learner" (Naismith and Corlett, 2006) successful projects also need strong institutional support, including the design of relevant resources in mobile format, staff training, and technical support.

2.8. Challenges of M-learning in English language learning:

There are many critical assessments of m-learning research and applications. Currently m-learning runs danger of becoming a buzz work as empty as 'e-learning', as (Ullrich et al., 2008) noted that,

'Some years ago, every learning software that used the Internet in some way was coined as 'e-learning software' regardless, of whether it was innovative or helpful for learning'.

Patten, etal(2006) classified m-learning services into seven broad categories and stated that much of the work presented across the categories has limited success 'in the field'. Whilst m-learning applications are many, they tend to

be occasionally used in an education context and have not yet had any great impact on education (Pozzi, 2007). Based on a summarization of current m-learning projects, argued Herrington et al. (2007) current m-learning applications are predominantly within a didactic, teacher-centered paradigm.

A contradictory view, however, that is m-learning is a learner-centered approach as acknowledged by almost all the scholars. These pedagogical approaches well explain how learners can learn better in a stable and mostly pre-defined learning context, but offer limited understanding on the learning activities in a constantly changing social context with limited or even no intervention from teachers. Consequently, these theories fail to establish a unified education strategy in aligned with the unique nature of m-learning. Even if there are already tens of m-learning initiatives available, strategy as to how to integrate them into a sound system is lacking. First, although m-learning is acknowledged as an education approach offering great autonomy and freedom, little considerations is made regarding in what way these freedoms can benefit learners. Second, the so-called, 'at the right time', 'at the right place', 'on the right device', 'for the right person with the right content' access of m-learning (Bhaskar & Govindarajulu, 2008; Wagner, 2005), remains a slogan instead of a reality.

There is also a lack of understanding on the long-term impact of m-learning activities. Indeed, prior studies indicated that mobile technologies are being widely adopted and inherently engage young generations nowadays (Cobcroft, Towers, Smith, and Bruns, 2006). However, more recent findings report that simply availability of technology doesn't guarantee the adoption of m-learning services (Wang, Wu, and Wang, 2009). Students are still not

ready for mobile-learning even with advanced handhelds (Corbeil and ValdesCorbeil, 2007). On the other hand, many students are not willing to use handhelds for accessing training and education (Attewell, 2005). Good explanations for these phenomena are lacking.

2.9 Barriers Obstruct Adoption of Mobile Learning

2.9.1 Lack of A generalizable Theory of Mobile Learning.

A significant amount of literature pertaining to mobile learning currently exists; however, most of the research is technocentric and overlooks the pedagogical issues associated with integrating mobile technology into the classroom (Ozdemir, 2010). Schools continue to remain hesitant about adopting mobile learning as a form of classroom instruction. Instead, a mobile learning theory needs to be established that embraces learning that occur outside classrooms and lecture halls by people performing basic learning activities (Liaw et al., 2010). This mobile learning theory should investigate the ubiquitous nature of these personal and knowledge sharing devices. Moreover, further research is needed to elucidate the advantages, challenges, and limitations of using mobile devices as learning tools and to create appropriate learning pedagogies (Ozdemir, 2010).

2.9.2 Lack of Empirical Evidence of Effective Use in Classrooms

Studies have documented the use of mobile devices in the clinical setting (Scordo & Yeager, 2003), which provides great potential for the use of mobile learning with nurse practitioner students, but the mobile technology

for learning still lacks empirical evidence to support its use in classrooms (Wyatt et al., 2009). Although mobile technologies afford students and teachers more flexibility and freedom, "new pedagogies and approaches to delivering and facilitating instruction" (p. 54) need to result from the implementation of these devices (Corbeil & Valdes-Corbeil, 2007). Within schools, the actual learning practices continue to undergo significant changes; however, the learning theories that support educational practices are not (El-Hussein & Cronje, 2010)

2.9.3 Lack of Effective Design of Mobile Learning Tools

Sharples et al. (2008) feel that the design of mobile learning activities should be driven by specific learning objectives. The technology should be used as a means to further engage students and promote activities that would not have been possible without the use of the technology. Schwabe and Goth (2005) investigated the motivational values of mobile learning as a result of the use of mobile games. In their experiment using the MobileGame system, Schwabe and Goth discovered four technical design issues that need to be addressed to create an effective learning game: accuracy of positioning, play on the move, offline area and response time, and interface design.

As the demands for mobile technologies that support learning continue to increase, the need for the creation of quality applications and tools for mobile learning devices must also be acknowledged. Well-designed mobile learning games and other applications can be used outside of the classroom in an effort to spark discussions when the students return to class (Klopfer, Osterweil, & Salen, 2009).

2.9.4 Technology Integration Barriers

Ertmer, (1999) identifies two types of barriers that block any technology implementation efforts in the classroom. First-order barriers are extrinsic and include a lack of access to technology, insufficient time to plan and inadequate technical and administrative support; whereas, second-order barriers are intrinsic and include teachers' beliefs about teaching, computers, classroom practices, and confidence in skills (Ertmer, 1999).

First-order barriers, when eliminated can lead to an "adjustment" of current practices, which can lead to a more effective way to teach, but does not change teaching practices or adjust any underlying beliefs held by the teacher. While first-order barriers (access, support, and time) seem manageable to address, technology integration cannot be sustained without confronting the second-order barriers.

Teachers' attitudes and beliefs towards technology need to be addressed during professional learning in order for technology integration to occur in classrooms. Bandura, (1997) identifies achieving success as the most effective way to shift one's beliefs, but how do technology trainers get teachers to take a risk with technology in order to achieve success? Start with removing first-order barriers first.

2.9.5 Mobile Technology Access

As mentioned by (Fox & Rainie, 2014), in the past, access to technology has been a barrier to technology integration. However, as we progress further into the 21st Century, access seems to be less of a problem. Teachers and students have more access to technology than previously thought. In

response to the 25th anniversary of the Internet, Pew Research measured the rapid adoption of the Internet. In 1995, only 14% of adults polled were users of the Internet. In 2014, that number grew to 87%. Even more staggering is that 97% of young adults (ages 18-29) utilize the Internet today (Fox & Rainie, 2014).

According to a study released by Nielsen, (2013), 70% of teens (ages 13-17) own a smartphone. For a frame of reference on the rapid increase of smartphone adoption amongst this age group, 58% of American teens owned a smartphone in 2012, and 36% in 2011 (Kerr, 2012).

Students are accessing the Internet at home and on the go, utilizing various mobile devices for entertainment and communication purposes. Educators must leverage technology that is already in the hands of our students in order to engage learners. This can be accomplished through building teacher self-efficacy with technology.

2.9.6 Teacher Self-Efficacy

In order for technology to be utilized in the classroom, district leaders need to ensure that teachers' attitudes and beliefs towards technology are positive. Pajares (1992) emphasizes the importance of this second-order barrier by identifying a strong relationship between teachers' educational beliefs and their planning, instructional decisions, and classroom practices. Teacher beliefs influence professional practice, which is why confronting these beliefs is an integral step in integrating new technologies in the classroom.

Bandura (1997) defines self-efficacy as the belief about one's capability to learn or perform actions at certain levels. Bandura emphasizes that self-

efficacy is not based solely on an individual's skill level, but on the belief that one can complete a task. This makes self-efficacy a predicament for technology integration in that if a teacher believes he/she can accomplish technology integration then he/she will attempt it. But, if the teacher does not have the skills to do so, then he/she will not even try it.

Science, Technology, Engineering, and Mathematics report to the President captures this predicament of technology integration, *"Some teachers who are early technology adopters do this routinely, and selecting materials they feel fit their students' needs and their own instructional goals and preferences. But most teachers lack the time, confidence, content knowledge, and inclination to do so*"

(President's Council of Advisors on Science and Technology, p. 80). Increasing teacher self-efficacy with technology can be accomplished in various ways. Vicarious learning, or learning through watching others successfully complete a task, with technology can increase efficacy (Bandura, 1997; Wang, Ertmer, & Newby, 2004).

Utilizing early adopters or teacher leaders to demonstrate examples of effective technology integration will create this learning environment, which could also lead to Professional Learning Communities (PLCs). These learning communities can lead to collaborative discussions and networking that can grow and build self-efficacy with and amongst teacher colleagues. Another way to increase self-efficacy with technology is to differentiate technology training based on teachers' levels of skill and confidence—just as one would differentiate instruction in a K-12 classroom. Technology professional learning should meet and challenge teachers at their current

level of skill and comfort, so not to intimidate or frustrate them. Sheingold (1991) suggests this type of technology training- through "iterative interventions" would be responsive and flexible in order to meet the needs of the learners (in this case, teachers) in order to respond to individual levels of use. Educators utilize differentiation in the classroom to meet P-12 students' needs, this also needs to be done during technology professional learning in order to meet and respect individual teachers' needs. This is just good teaching practice. Technology professional learning must address teachers' beliefs and concerns about technology in order to increase the likelihood of technology adoption in individual classrooms.

2.9.7 Technology Support

Other effective teaching practices that support students in the classroom, and will do the same for teachers as technology learners, are follow-up and support. When students learn a new concept or skill, they have to work independently to practice their new learning, and the teacher provides feedback and guidance throughout the student's learning process. Technology professional learning for teachers does not always follow this effective teaching practice. Massive, large-group, stand-alone technology training are not an effective use of professional learning funds if teachers are not expected to follow-through and do not have an identified support system. Support can be provided through the establishment of PLCs, the awareness of technology teacher leaders in the building, identified personnel that provides technology support, online tutorials, and examples, books, etc. Having a variety of support access points that accommodates the variety of teacher learners and their stages of concern will provide a return on

investment in these support systems in that teachers will accommodate the variety of teacher-learners in a district.

"Teachers' abilities to identify the human and digital resources, within and outside their school, that can provide the help they need, can have a dramatic impact on the success of technology integration"

(Groff & Mouza, 2008, p. 31).

Having a support plan in place that is clearly communicated to teachers in a variety of different formats will indicate that technology integration is a priority and expectation and respect the individual teachers' learning styles (Groff & Mouza, 2008).

2.9.8 Technical limitation or Restriction of Mobile Devices

Despite the many advantages of M-learning as a new technology to enhance learning and teaching in all education institutes, it does have some limitations that need to be considered as issues facing its implementation. According to previous studies, the limitations of implementing M-learning are as follows:

Many studies (Seppala, etal , 2002; Corlettt et al., 2005; Wang, Wu and Wang, 2009; Hashemi et al., 2011; Park, 2011) indicated that mobile devices have some limitations due to small screen, memory size, slow network speed, battery life and small and limited keyboard. Furthermore, the devices being used in M-learning may not give the same resolution or design of contents as a computer (Barker et al., 2005). In addition, mobile devices are

limited in processing power and resources and they have a variety of different input possibilities and operating systems.

2.9.9 Users' psychological limitations.

Some studies (Wang, Wu and Wang, 2009; Park, 2011) indicated that students are more likely to use mobile devices for entertainment uses such as listening to music, texting other friends and checking social networks rather than for educational purposes.

2.9.10 Safety and Security Issues

Mobile devices are easy to lose, subject to damage, and are more likely to be stolen and misused. These issues might be barriers to learners from low-income backgrounds owning these devices to collaborate in the learning environment (Barker et al. 2005).

2.9.11 Pedagogical Aspects.

Some pedagogical aspects should be taken into consideration while mobile devices integrated into learning (Wang, Wu and Wang, 2009; Park, 2011). For example, using mobile devices in class might disturb students‟ concentration and impede the learning process.

2.9.12 Implementation Cost.

The cost of the mobile devices and infrastructure of implementing M-learning is still expensive, in addition to the need for wireless services, budgeting for maintenance and repairing the tools, and training and support costs for teachers, learners and parents, all of whom have to understand the functionality of the devices to fully engage in the M-learning process (Nasimith et al., 2004; Barker et al. 2005).

Naismith et al. (2004) identified some thematic challenges that need to be considered when implementing an M-learning system:

Context. mobile-learning provides the ability to access information about the user‟s environment, which can cause privacy concerns.

Mobility. M-learning offers a link to activities anytime, anywhere, inside and outside the classroom. Although intended to improve relations between those involved, this could allow learners to break away from engagement with their lecturers or with the curriculum.

Learning over time. Effective mobile devices are needed to organize and reflect the M-learning experience for lifelong learners.

Informality. M-learning enhances informal learning. In this kind of learning, learners might misuse the technology to pursue leisure activities (e.g. social networks) rather than focusing on M-learning tasks.

Ownership. Learners like to own and control their technology devices. This allows them to engage and evaluate the learning practices. However, this might create a challenge for the institute to control this ownership of technology.

Yardanova, (2007) highlighted numerous social and technical issues in the implementation of mobile learning in education. He indicated that the most three key problems related to the use of M-learning in education are students‟ acceptance, specific features of mobile technology and the limited range of mobile devices. Young people are familiar with functionality and capability of mobile devices, and easily accept the idea of wireless technologies integration. In addition, Yordanova, (2007) suggested that learning materials have to be delivered to mobile devices in the format of learning objects that can be displayed in a flexible and user-friendly manner. Furthermore, she indicated that the privacy of user data and the confidentiality of learning materials are critical success factors for the implementation and development of an effective mobile learning system.

2.9.13 Mobile size

Many other characteristics that have led to the ubiquity of mobile devices are also viewed as by some researchers as potential barriers. For example, the small size of mobile devices is what allows for mobility and portability, enabling anytime, anywhere learning. However, researchers are concerned that the screen size of mobile devices may influence learning. Research analyzing screen size and learning is limited; however, Manair (2007) found that students learned significantly more when the screen size is more than 58mm (2.28 in.) diagonal.

2.9.14 Personal Nature of Mobile Devices

Other major barriers, according to researchers, relate to the personal nature of mobile devices. Many foresee challenges associated with creating content

for various independent operating systems of student mobile devices (Kadirire, 2009). Others believe the personal nature of mobile devices may hinder collaboration by isolating users from meaningful social interactions (Dieterle et al. 2007; Mandryk et al. 2001).

2.9.15Teacher-Student Gaps

As mentioned by Pamela, P.(2011) another gap in the literature, however, has the potential to hinder the integration of mobile learning in the classroom, perhaps more than any other. Teacher-student gaps seem to be a massive barrier to incorporating mobile devices in the classroom.

Although teacher fears of disruption and cheating may be valid on some level, research is needed to understand how to appropriately teach "mobile etiquette." Since the mobile devices can be used for both social and educational purposes, students must be taught how to appropriately use and navigate the mobile world within an educational context.

2.9.16 Conclusion About Barriers

To sum up, the previous benefits do not come without challenges. The rapid spread of mobile applications has outpaced the traditional software applications. Moreover, the economic situation; technical issues and other factors can occur in implementation of mobile devices in learning e.g. The following issues:

- Connectivity and battery life
- Screen size and key size (Maniar and et. Al. 2008)
- Number of file/asset formats supported by a specific device
- Content security or copyright issue from authoring group

- Multiple standards, multiple screen sizes, multiple operating systems
- Reworking existing E-Learning materials for mobile platforms
- Limited memory (Elias, 2011)
- Risk of sudden uselessness (Crescente and Lee, 2011)
- Accessibility and cost barriers for end users: Digital divide.
- How to assess learning outside the classroom
- How to support learning across many contexts
- Content's security or pirating issues
- Frequent changes in device models/technologies/functionality.
- Developing an appropriate theory of learning for the mobile age
- Conceptual differences between E-Learning and M-Learning
- Design of technology to support a lifetime of learning (Sharples, 2000; Moore, 2009)
- Tracking of results and proper use of this information
- No restriction on learning timetable.
- Personal and private information and content
- No demographic boundary
- Disruption of students' personal and academic lives (Masters, K., 2007)
- Access to and use of the technology in developing countries (Masters, K., 2007)
- Risk of distraction (Crescente and Lee, 2011).

2.10 Review of Previous studies

First study

Ahmad, A. (2014) Towards Mobile learning Deployment in Higher Education in Brunel University London. Published Ph.D. Thesis.

The aims of this research work are to study students‟ readiness for M-learning, investigate the factors that affect students‟ acceptance and analyze M-learning literature in order to propose and evaluate a model which can be used to foster the sustainable deployment of M-learning within teaching and learning strategies in higher education institutions.

The research was conducted at Brunel University, West London. Data were collected from Students from different undergraduate levels. Data were reported from 174 participants (125 males, 49 females students using three surveys. The outcome of this research leads to a conceptual model that gives a wide overview of all elements that need to be addressed in the mobile -learning the environment and bridges the gap between the pre- and post-implementation phases in order to ensure sustainability. Furthermore, the model provides university educators with a planned approach to incorporate Mobile -learning in higher education curriculums with the aim of improving teaching and learning.

Second study

Mohamad, M. (2012) Mobile learning in the English vocabulary acquisition: Toward the implementation in Malaysian secondary schools. Unpublished Ph.D. Thesis

This thesis explores the use of mobile phones to support English vocabulary learning in Malaysian schools with the interview as the main research tool. The methodology consists of rigorous steps in developing, evaluating and disseminating the implementation strategy as well as exploring other issues associated with mobile learning implementation in Malaysian schools. It has been established that the implementation strategy developed in this study would have the potential to provide guidance in the implementation of mobile learning in Malaysian schools. The findings revealed the opportunities and the challenges in embracing mobile phones as a learning tool.

Third study

Osman, M. (2013) Evaluation of mobile and communication technologies for language learning. Unpublished Master Thesis**.**

This master's thesis explores the use of mobile and communication technologies in English Language learning. Specifically, the use of mobile phone and wiki in language learning is investigated among the undergraduate student in a higher education institution. By applying both quantitative and qualitative methods, three themes are derived in the study; accessing, communication and usability. This finding suggests that although the use of mobile phone and wiki in language learning is feasible, further studies are needed to enhance the possibility. This study is important in providing alternative learning tools in the area of English Language learning.

Fourth Study

Baharom, S.S. (2012) Designing mobile learning activities in the Malaysian Higher Education Context: A Social Constructivist Approach. Unpublished Ph.D. Thesis

This thesis explores how mobile learning activities, developed using social constructivist learning principles have the potential to support an undergraduate in English Language learning. The methodology applied in the study is a design-based research with two stages of data collection. The research tools include questionnaires, students' blog posts, and online interviews. The findings indicate that students have a positive attitude toward the use of mobile learning in their learning activities. The study also highlighted several types of mobile learning activities which should be introduced; contextual, reflective, and collaborative, multiple media, communication and learning management.

Fifth study

Maria B. Cruz (2012) Student and Teacher Perceptions of a Mobile-Based Biology Vocabulary Study Tool for English Language Learners published Ph.D. Thesis.

This study investigated biology students' perceptions of their experience independently using an iPod Touch-based mobile study tool to complement classroom learning. Interviews with the students' biology teacher, an educator with a strong background in language acquisition teaching and learning, were also used to supplement student testimony.

Sixth study

Al-Fahad (2009) investigated students‟ attitudes and perceptions towards the effectiveness of M-learning. The author conducted a survey of 186 undergraduate students from different colleges in order to understand how they used mobile technologies in their learning environments. The results illustrated that M-learning is widely accepted by the student community. Students agree that wireless networks increase the flexibility of access to learning resources. Also, students are interested in using mobile learning tools via laptops, mobile phones, and PDAs to be able to access the information anytime, anywhere. The results of the study indicated that M-learning activities can engage students in the learning process and transfer them from passive learners to behaviorally and intellectually active learners.

Seventh Study

Muhanna and Abu-Al-Sha‟r (2009) in a study based on graduate and undergraduate students at a Jordanian university, investigated the university students‟ attitudes towards the usability of cell phones in a learning environment wherein cell phones are used as learning tools in the classroom. In addition, the study aimed to explore any differences in students‟ attitude based on their gender and level of study. The researchers conducted a survey consisting of two questionnaires among two groups of two different levels of university students. The questionnaires were distributed to 50 student's university levels (graduate, undergraduate) and gender (male, female). The findings indicated that students appreciate using cell phones in the learning environment. Undergraduate students are more interested in using cell

phones than graduate students, and female students are less ambitious in this regard than males. These results were in agreement with previous research done in the same area. Thirteen students chose to participate in the study. All 13 students were between ages 14 and 18.

Eighth study

Jacob and Issac (2008a) investigated the concepts of mobile learning for higher education and discussed the potential of some different wireless technologies. They conducted a survey to find and analyze the essential factors that can overcome the difficulties of the implementation mobile learning in higher education. In addition, they gave attention to some variables that might influence student perceptions of mobile learning: gender, course of study and attitudes to new technology. They concentrated on mobile learning using a wireless laptop with some discuss to other technology.

The survey contained three specific objectives: 1) discovering students‟ general attitudes toward mobile learning on campus; 2) examining the relationship between the attitudes in (1) and essential background factors like gender, course of study and attitudes toward the new technology; and (3) revealing the advantages and disadvantages that students expected in the context of mobile learning. A sample of 250 students from business and engineering schools in a Malaysian university who are familiar with wireless networks participated in the survey. The results showed that the majority of students expressed vocally that they need laptops, PDAs, and handphones to be working together for communication and learning anytime, anywhere. Students expressed some predilection to laptop-based network

communication over mobile phones due to the former's greater effectiveness in displaying learning contents.

Ninth study

Corbeil and Valdes-Corbeil (2007) investigated whether distance learning students and faculty members were ready to make the jump from E-learning to M-leaning. An informal survey was conducted to determine students‟ and faculty members‟ use of mobile devices in their learning and teaching activities. The results indicated that both students and faculty members had not fully integrated mobile technologies into their teaching and learning activities. They used their mobile devices at work but only for entertainment purposes, however, a high portion of students expressed readiness for M-learning**.**

Tenth Study

Trifonova,etal (2006**)** investigated the use of M-learning in two European universities: the University of Trento, Italy, and the University of Ruse, Bulgaria. Students were asked about the availability of mobile devices, their opinions on learning systems and the services that mobile learning should supply. The findings indicate that students‟ attitude toward M-learning is dependent on the way they have used E-learning. For example, students who use E-learning tools and are comfortable with these types of services, have a positive attitude about M-learning. Students expect M-learning to provide several services that integrate E-learning solutions. Also, the prices of the suitable device, as well as the price of the services being supplied, are important factors for the use of a successful mobile learning application. In

terms of gender, the study found that male students were more interested in using an M-learning system than female students, who stated a preference for the traditional class-based approach to learning**.**

2.11 The Future of Teaching and Learning with Mobile Technologies

The current trends in mobile computing are towards devices that are even more embedded, ubiquitous and networked than that available today. The competencies of mobile phones, PDAs, games comforts and cameras will likely merge within the next five to ten years to provide a networked, multimedia device that is always with you. Integrated context-aware capabilities will transform everyday activities by providing the ability to capture details about the time, location, people around you and even the weather. The entire internet will become both personal and portable.

Laura, et al, (2006) stated that such technologies can have a great impact on learning. Learning will move more and more outside of the classroom and into the learner's environments, both real and virtual. Learning will involve making rich connections within these environments to both resources and to other people. In addition to consulting internet-based resources on the move, learners will be able to manage the administration of their learning through consultations with their personal diaries and institution-based virtual learning environments. The ability to instantly publish their observations and reflections as digital media will empower them to be investigators. Context-aware applications will enable learners to easily capture and record events in their life to both assists later recall and share their experiences for

collaborative reflection. Opportunities for distributed collaboration and mobile team working will be greatly enhanced.

From the above mentioned the researcher realized that the challenge for the educationalists and technology developers of the future will be to find ways to guarantee that this new learning is highly situated, personal, collaborative and long term; in other words, truly learner-centered learning. Educators will need to adapt from a role as transmitters of knowledge to guides of learning resources and facilitator of learning events. Technology developers will need to respond to concerns of security and privacy while designing devices and services that learners both want and will pay for.

Whether they are comfortable right now or not, mobile devices are finding their way into classrooms in children's pockets, and we must warrant that educational practice can comprise these technologies in productive and efficient ways. In the future, the success of learning and teaching with mobile technologies will be measured by how seamlessly it weaves itself into our daily lives, with the greatest success paradoxically occurring at the point where we don't recognize it as learning at all. Finally, the researcher concluded that mobile technology can effectively support a wide range of tasks for learners of all ages. While implementation examples can be broadly categorized within the main theories and areas of learning appropriate to mobile technology, the most successful adopt a blended approach to their use (Laura, et al, 2006).

Mobile technologies provide for each student to have a personal interaction with the technology in an authentic and appropriate context of use. This does not mean, however, that the use of mobile devices is a panacea. Significant

technological and administrative challenges are encountered along with a more ill-defined challenge: how can the use of mobile technologies help today's educators to embrace a truly learner-centered approach to learning?

2.12 Question for the Future of M-learning

According to UNESCO, (2013) future is sure to hold significant technological shifts conveyed by new learning opportunities, the educational community needs to capitalize on these opportunities to shape a future in which mobile technologies help facilitate learning for all. Just because mobile technology will be more accessible, affordable and powerful does not necessarily mean it will be used productively or to its full potential. Outlined below are important questions to be addressed if mobile learning is to transform from a field of uneven and scattered innovation into a dynamic force for educational impact (UNESCO, 2013).the questions are following:

- Has the education community recognized the vast potential that lies within informal learning spaces, and is it leveraging the ubiquity of mobile technologies to afford new breakthroughs in bridging school, after-school and home environments?
- Aside from the traditional model of education, what other types of education systems have emerged, and how are mobile devices being used to support them?
- What skills are needed in a modern world, and is the education community capitalizing on the full range of tools available to help impart these skills?

- Do teacher training programs consider the unique value that a teacher adds in a world where enormous amounts of information are immediately available to all learners (Johnson et al., 2012)?
- How do we build capacities for learners to exercise greater control and choice over their own learning?
- Are model initiatives in the field of mobile learning effective, not only in terms of results but also in terms of scale and impact?
- How do we effectively train educators to use mobile technologies to advance and ensure high-quality learning?
- Have mobile learning solutions proven their value to learners and their families, so that parents and other gatekeepers become increasingly willing to invest in mobile devices (GSMA, 2012)?

All of all, It is important to consider these questions because the decisions made by policy-makers and education stakeholders today will determine what mobile learning looks like tomorrow. With clear and up-to-date strategies in place, mobile learning can and will make positive contributions to teaching and learning and help growth educational access, equity, and quality for all.

2.13 Summary

This chapter reviewed the literature on M-learning, including the definitions and concepts of M-learning, and mobile related learning theories, the relation between M-learning and E-learning, benefits of M-learning and the limitations and challenges of this technology. Moreover, barriers obstruct the use of mobile devices in English language learning are comprehensively

presented. The chapter also presented related previous studies conducted in the field of mobile learning, and the review of M-learning literature shows that such technology has the potential to impact positively on the higher education environment. Finally, the future of teaching and learning with mobile technologies will be highlighted and; questions for the future of m-learning were raised.

In sum, the literature review on mobile learning research indicated that mobile learning could enhance the learning process through increased access anywhere, anytime in different contexts and offered a consensus view on its advantages and limitations. To implement mobile learning successfully, the educational institutions are responsible for understanding how to best use mobile devices for educational purposes and taking advantage of what these devices offer in mobility and convenience. This opportunity especially exists in higher education as the student population is one of the largest portions of society with the highest percentage of mobile devices ownership, especially smartphones. In order to understand how to best use mobile devices for learning, the first step is to understand the perceptions of teachers and learners' of using these devices for learning and education.

Chapter Three

Methodology

3.1 Introduction

The aim of this chapter is to describe the design and methodology used in conducting this study. It provides details about research population, participants, data collection procedures, and instruments used in this study. The interview and questionnaire are the tools of data collection in this study. The reliability and validity of these tools are presented comprehensively. It concludes by explaining the type of data analysis and ethical concerns.

3.2 Research Method

This study adopted a mixed method; both quantitative and qualitative methods were used to collect data from the selected participants. These methods assisted in building a base on a complete understanding of the research problem.

3.2.1 A mixed Method Approach

A mixed methods study involves the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research (Creswell et al., 2003, p. 212).

Creswell , (2014) added, mixed methods is a research approach, popular in the social, behavioral, and health sciences, in which researchers collect,

analyze, and integrate both quantitative and qualitative data in a single study or in a sustained long-term program of inquiry to address their research questions.

3.3 Population and Sampling

In this study, the population was 183 Sudanese English language University students. The sample was 90 learners divided into subgroups from three universities. These Universities were Khartoum University, Sudan University of Science and Technology, and Omdurman Islamic University. Accordingly, 30 male and female students represented each University. The research sample similarly included nine English language lecturers, representing English Language teachers from these Universities, samples of three teachers were randomly drawn from each subgroup. These divisions permitted the comparison of subgroup results.

3.4 Data Collection Techniques

The main instruments used in this study the mixed method research consists of closed-ended questionnaires and interviews. These different ways of gathering information can supplement each other and hence increase the validity and dependability of the data. The quantitative data are obtained through closed-ended questionnaires and the qualitative data through an interview. The items of the questionnaires are mainly developed based on the research objectives and research questions.

3.4.1 Questionnaires

The aim of the questionnaire was to elicit direct judgments; obtain uniform, straightforward; data for analysis. Questionnaire encompasses a variety of instruments in which the subject response to written questions to elicit reactions, belief, and attitudes. In this study, the questionnaire was designed to gather either qualitative or quantitative data and to elicit information from the 90 English language learners on their attitude towards using mobile phones in learning The English language. The questionnaires were distributed to the research sample.

The questionnaire which was developed to elicit the data on students' perceptions about using mobile devices in language learning consisted of three parts. Part 1 contained 10 items asking about learners' attitudes towards using mobile in English language learning. Part 2 consisted of eight items asking about benefits of using mobile in English language learning and Part 3 consisted of nine items asking about barriers that hinder the learners from using mobile in English language learning, and The Questions measured by a 5-point Likert scale (1=strongly disagree; 5= strongly agree)

3.4.2The Interview

The second main type of data to be collected in the mixed method design is the interview contends. Burns, (1999 p. 118) stated that *"Interviews are a popular and widely used means of collecting qualitative data.*"

In general, the interview can be conducted in two forms: person-to-person and group or collective formats. Merriam, (1998) believes that both of these forms of the interview are a kind of goal-oriented conversation.

In this study, open-ended questions, 20 minutes-long interviews were conducted with nine Sudanese English language university staff members representing three public universities in Khartoum state, in order to provide more understanding of teachers' perceptions of mobile learning. A list of questions with reference to the relevant variables guided the interviews. The interviews were conducted during and after collecting the questionnaires information from the learners. The interviews were all audio-recorded and transcribed for further analysis or interpretation. The data gathered from these interviews were also triangulated with those from questionnaires. The questionnaire consisted of three parts representing the research questions, question one consists of ten statements and question two consists of eight statements and question three consists of nine statements. It is organized according to Questions, the first question about the benefits of using mobile learning in English language learning. The second question is about the learners' attitude towards the use of mobile devices in their learning process. Lastly, the third question about barriers which may obstruct English Language learners from using mobile devices in their language learning process.

(Appendix B).

3.5 Research Procedures

3.5.1 Students' questionnaire

A questionnaire was designed in the second semester of the academic year 2016/2017 to collect the data for this study. The questionnaire was sent through a whatsApp group to all students in the department. The whatsApp contained the link to the questionnaire and the expected time for completing the survey was 10 minutes. In the first page of the questionnaire, a brief explanation of the research project and the aims of the study were provided. Students were also given definitions of the concepts being used in the questionnaire (i.e. E-learning and M-learning). In addition, students were informed that all the data and participants details would be kept anonymous and that they could withdraw from the study at any time. Participants were also provided with the contact information of the researcher.

3.6 Research Questions, Hypotheses and the Research Instruments

Table 3-1, Research Matrix

Research Questions	Data collection instruments	
	Interview	Questionnaire
1. How do students perceive mobile devices as a learning tool integrated into class and what are their attitudes towards mobile learning?	√	√
2. To know the teachers' attitudes towards using mobile devices in English language learning.	√	×

3. What are the benefits of using mobile devices in English language learning?	√	√
4. What are the barriers obstruct English language learners from using the mobile devices in their learning process?	√	√
Research Hypotheses		
H1: There is a significant association between using a mobile phone as learning tool integrated into the classroom and the benefits that the student acquired.	×	√
H2: There are various barriers that could obstruct learners to use a mobile device for learning the English language.	×	√
H3: There are no statistically significant differences between participants' regarding using mobile devices in terms of attitudes, benefits, and barriers, related to age and gender	×	√

3.7 Validity and Reliability

The questionnaire was validated in terms of reliability and validity. Reliability is the degree to which a test consistently measures whatever it is measuring (Hayes, 1998). Initial internal consistency reliability was assessed on the data collected in the pilot test using reliability coefficient of Cronbach's alpha (Lattin et al., 2003).

Validity is the best available approximation to the truth of a given proposition, inference, or conclusion. Validity is an essential criterion for quantitative and qualitative paradigms in terms of credibility, neutrality or Confirmability, consistency or dependability and applicability or

transferability Lincoln and Guba 1985; Cohen et al 2000; Trochim, 2001; Patton (2002).

The researcher also did generalizability analyses to ensure that individual teachers receive data that are reliable. Generalization analyses were also performed to ensure that individual students received reliable data. In this study, different data collection techniques were used (i.e. interviews, and questionnaire) also meant to ensure validity.

Additionally, triangulation was used to search for any convergence among multiple and different sources of information and form themes or categories in the study Creswell and Miller (2000). Although the size of participants in this research was small compared to the target population, it is expected that the data collected will be sufficient to give an overview of all target populations.

3.7.1Testing Questionnaire Reliability and validity

To test the questionnaire a pilot study was conducting by selecting a sample size (25) individuals from the population of the study, and then Person's Correlation coefficient was run which it aims to find if each statement is correlated with the dimension to which it related as will be shown in the following table:

Table 3-2 shows validity of the questionnaire

Dimension 1, mobile device as a tool		Dimension 2, benefit of using a mobile phone in learning		Dimension 3, barriers of using a mobile phone.	
1	0.854**	11	0.873**	19	0.646**

2	0.833**	12	0.941**	20	0.484*
3	0.884**	13	0.873**	21	0.554**
4	0.889**	14	0.840**	22	0.790**
5	0.692**	15	0.689**	23	0.538**
6	0.838**	16	0.900**	24	0.353
7	0.629**	17	0.920**	25	0.845**
8	0.716**	18	0.890**	26	0.416*
9	0.383			27	0.790**
10	0.773**				

The **correlation coefficient is statistically significant at the (0.01) significant level.

*correlation coefficient is statistically significant at the (0.05) significant level.

It was clear from the results in the above table, that the majority of questionnaire items are positively correlated with the dimension to which they related, and it was noticed that the correlation coefficient values extend between (0.484- to 0.920), and all the values are statistically significant.

3.7.2Reliability statistics:

To examine the questionnaire reliability, Cronbach's Alpha coefficient was run and the result demonstrated in the table below:

Table 3-4 showed the questionnaire reliability statistics

	Number of items	Cronbach's Alpha
Dimension 1: the mobile devices a learning	10	0.915

tool integrated into the classroom.		
Dimension 2 : benefits of using a mobile phone in English language learning	8	0.952
Dimension 3: barriers of using a mobile phone in English language learning	9	0.764
Overall reliability	27	0.834

The results in table showed that the overall questionnaire reliability is reaching (0.834), which indicated that the questionnaire used for data collection achieved a very high reliability. While the questionnaire dimensions also have achieved very high values, as they extended between (0.764- 0.952). Thus, it could conclude that the questionnaire as a method for data collection is sufficiently suitable to collect the needed data that contribute to achieving the research objectives.

3.7.3 The Face and content validity of the Questionnaire and interview

In looking for the face validity of the questionnaire, the researcher referred some specialists in the field of applied linguistics such as Dr. Nyron Gonzales, Dr. Aladdin, Dr. Salim and Dr. Sami Huessin – English Langauge Institute - King Abdul-Aziz University- Kingdom of Saudi Arabia. They approved that the instruments are inclusive, suitable, appropriate as well as it is valuable for the purpose of the study. In addition, they recommended that some of the statements should be changed to suit Likert scale. The changes have made before the distribution of the instruments according to the

specialists' suggestions. After that, questionnaire and interview were distributed

Credibility

Credibility in any study is enhanced when strategies are put in place to check on the inequity of data and to allow for direct testing of findings and interpretations by the human sources from which they have come Lincoln and Guba (1985) ; O'Donoghue (2007). In this study, credibility was enhanced by the extended period of data collection and triangulation as suggested by McMillan and Wergin (2002).

Transferability

Transferability refers to the extent by which results provide insights useful comparable to other settings. The various data collection instruments used in this study will enable judgments to be made about the transferability of the findings to other contexts including detailed analysis of questionnaires instruments and interviews. This study was transferred to all Sudanese English language university learners and teachers because they shared the same contents and with similar characteristics

3.8 Final Instrument

After piloting the questionnaire and examining face and content validities and reliability, the original instrument was finalized to twenty-seven items for administering to the sample population. Throughout the process of instrument development and testing, the emphasis was on the proper instrument design for subsequent statistical analysis. The final instrument is presented in Appendix B

3.9. Data Analysis

To achieve the research objectives data needed to be collected through using a questionnaire method, and qualitative approach. Data collected are entered and treated by using the Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics techniques such as frequencies, percentages, average means, standard deviations have been used to analyze and interpret the sample perceptions, and demographic characteristics. In addition to that the questionnaire reliability and validity was examined by using Cronbach's Alpha coefficient, moreover, analysis of variances techniques such as (T-Test) was used to find if there are significant variations in learners attitudes towards using mobile devices in English language learning by gender and age. While descriptive and interpretive analyses will be used to analyze qualitative data gathered through interviews. The data from interviews will be analyzed using a coding schemes system which categorized the data into smaller clusters of similar content to allow for simple statistical analysis (Nachmias and Frankfor, 1996).

3.10 Summary

This chapter provides specific details related to the research methodology, designs of the research instruments and statistical analysis employed in this research. The chapter started with a discussion of the research strategy, including an explanation of the mixed method approach adopted to address the research aims. Consequently, a discussion of the research instrument, participants, procedures and data analysis was provided. Finally, a research timeline illustrated the activities and time framework.

Chapter Four

Presentation, Analysis, and Interpretations

4.1 Introduction

In this chapter, data collected using different research instruments, are discussed and triangulated with each other, in order to pick up the research findings. The main objectives of this study are to determine learners' attitudes towards using mobile devices in the English Language from the perception of learners and teachers in the Departments of English within the Colleges of Education of three Sudanese Government Universities. It also aims to demonstrate the benefits of mobile learning in English language learning and identify the barriers obstruct English language learners from the use of mobile in English Langauge . In addition to that, the study will investigate teachers' attitudes towards using mobile in English language teaching.

To achieve the research objectives data needed to be collected through using a questionnaire method, and qualitative approach. Data collected are entered and treated by using the Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics techniques such as frequencies, percentages, average means, standard deviations have been used to analyze and interpret the sample perceptions, and demographic characteristics . In addition to that the questionnaire reliability and validity was examined by using Cronbach's Alpha coefficient, moreover, analysis of variances techniques such as (T-Test) was used to find if there are significant variations in learners attitudes towards the use of mobile in English language learning by gender and age.

Basically, the research aiming to find answers to the following main research questions:

1. How do students perceive mobile devices as a learning tool integrated into class and what are their attitudes towards mobile learning?
2. To what extends teachers are ready to use mobile in teaching process?
3. What are the benefits of mobile learning in English language learning?
4. What are the barriers obstruct English language learners from mobile using mobile devices in their learning process?

For answering questions one, Three, and four , the data collected by the questionnaire method (quantitative data) should be analyzed, whereas question two would be answered through the analysis of the data collected by the focused interview method (qualitative approach).

4.2 Sample of the study demographic characteristics:

The first sample of the study is (90) students segmented according to the following demographic characteristics include (age, gender, and specialization) as shown in the below table:

Table: 4 .1 Demographic characteristics of the sample (n=94) .

Demographic characteristics	Frequency	Percentages %
The distribution according to gender		
Male	37	41.1
Female	53	58.9
Total	90	100.0%
The distribution according to age		

15- to less 20 years	41	45.6
20- to 25 years	49	54.4
Total	90	100.0%

Table (4.1) illustrates the sample of the study demographic characteristics, regarding the sample distribution according to gender, it was noticed that the males students comprised 41.1% of the participants, whereas females represented 58.9%. While, for sample distribution according to age, it is clear that, there are about 45.6% of the participants under the age (15-to less than 20) years, whereas 54.4% of the age group (20-to 25) years old.
Thus, it could be concluded that the sample of the study is distributed fairly between the two gender groups and the two ages.

Table 4.2shows the sample of the study perceptions regarding using a mobile phone for educational purposes and its requirements.

	Frequency	Percent %
1.Have a mobile phone		
Yes	80	88.9
No	10	11.1
Total	90	100.0%
2.Use a mobile phone for educational purposes		
Yes	77	85.6
No	13	14.4
Total	90	100.0%
3.Net at home		
Yes	79	87.8

No	11	12.2
Total	90	100.0%
4.Net at university		
Yes	79	87.8
No	11	12.2
Total	90	100.0

The results in table 4.2, demonstrate the sample perceptions regarding if they have a mobile phone, using a mobile phone for educational purposes, and whether they have the internet at home or at the university. It could be noticed that the majority of participants (88.9%) have a mobile phone, whereas just 11.1% don't have. Regarding using a mobile for educational purposes, the result showed that 85.6% of the participants use a mobile phone for educational purposes, while only 14.4% don't. whereas regarding the availability of net at home or university there are about 87.8% they do have, where just 12.2% don't have net at home or university.

Thus, it could be concluded that there are sufficient indicators that support the possibility of using a mobile phone for educational purposes as a new method of education.

4.3 Research Questions and Hypotheses:

This part of data analysis is mainly specified to provide answers to the research questions and hypotheses through the analysis of perceptions in concern with using a mobile phone for educational purposes. The students' answers are rated in frequencies & percentages (%) as well as means presented in tables (3-4-5), the mean (M) was calculated according to the

five- scale (1 strongly disagree, 2 disagree, 3 uncertain, 4 agree, and 5 strongly agree).

Table 4.3 scale of the average mean value

1-to 1.79	Strongly disagree
1.8- to 2.59	Disagree
2.60- to 3.39	Not sure
3.40- to 4.19	Agree
4.20- to 5	Strongly agree

4.3.1 Research question one: How do students perceive mobile devices as a learning tool integrated into class and what are their attitudes towards mobile learning?

To provide answer to the previous question, the sample attitudes regarding how do students perceive mobile devices as a learning tool integrated into class and what are their attitudes towards mobile learning, expressed in frequencies, and percentages, and means (M) in table 4, below :

Table 4.4 Perception of the student of mobile phones as learning tool integrated into class (n=90).

			Strongly agree	agree	uncertain	disagree	Strongly disagree	M	ranking
1	Using mobile a phone will increase my vocabulary	F	42	32	7	6	3	4.16	6
		%	46.7	35.6	7.8	6.7	3.3		
2	Using a mobile phone will develop my writing style	F	38	36	5	9	2	4.10	8
		%	42.2	40.0	5.6	10.0	2.2		

3	Using a mobile phone will motivate me to speak English fluently	F	42	31	8	9	0	4.18	4
		%	46.7	34.4	8.9	10.0	0.0		
4	Using a mobile phone will enhance my English learning.	F	47	27	4	5	7	4.13	7
		%	52.2	30.0	4.4	5.6	7.8		
5	The use of a mobile phone will help to build the relationship between me and my teachers	F	55	32	1	1	1	4.54	2
		%	61.1	35.6	1.1	1.1	1.1		
6	Using a mobile device will help me to plan better for my learning	F	48	26	10	6	0	4.29	3
		%	53.3	28.9	11.1	6.7	0.0		
7	Using a mobile device will help me in sharing ideas, opinions and homework	F	23	50	14	2	1	4.02	9
		%	25.6	55.6	15.6	2.2	1.1		
8	Using a mobile device will help me brainstorming ideas about different topics	F	40	36	8	1	5	4.17	5
		%	44.4	40.0	8.9	1.1	5.6		
9	Using a mobile device will help me to communicate outside the classroom	F	89	0	1	0	0	4.98	1
		%	98.9	0.0	1.1	0.0	0.0		
10	Using a mobile device	F	21	47	16	5	1	3.91	10

	will assist me to record the lesson and send it to my classmates who were absent	%	23.3	52.2	17.8	5.6	1.1		
Overall mean								4.25	

From the results in table (4.4) we noticed that the overall mean value of the participants attitudes regarding, how do students perceive mobile devices as a learning tool integrated into class and what are their attitudes towards mobile learning is reaching (4.25)) which indicated that the majority of the students sample of the study strongly agree that the mobile devices can be used as a learning tool integrated into class.

The detailed analysis of the sample of the current study perceptions and attitudes regarding the usefulness of using mobile phone a learning method are presented accordingly as follows:

The findings in table 4 showed that the majority of participants with 98.9% strongly agreed that using a mobile device will help to communicate outside the classroom while only 1.1% was not sure. This high level of responses regarding the effectiveness of using a mobile device to help students to communicate outside classroom is supported by the mean value equal to (4.98).

The second most agreed with is that : The use of a mobile phone will help to build the relationship between me and my teachers, as there are about 61.1%

of the participants strongly agree, while 35.6% agree, whereas only 1.1% were not sure, and the same percent for those who disagree, and strongly disagree. This it could be concluded that the majority of participants strongly agree that the use of a mobile phone will help them to build a relationship between themselves and their teachers.

The third most rated item show the students' perceptions regarding the use of a mobile phone as learning tool integrated in the classroom is that" Using a mobile device will help me to plan better for my learning" as the are 53.3% strongly agreed, while 28.9% agree, whereas 11.1% were not sure, and only 6.7% disagree. This it could be concluded that the most participants hold positive perceptions regarding that the use of a mobile phone device will help them to plan better for their learning, this positive perception were supported by the mean value equal to (4.29).

On the other hand, the students sample of the study confirmed that "Using a mobile phone will motivate them to speak English fluently" as 46.7% strongly agree, whereas 34.4% agreed, while 8.9% were not sure, where 10.0% of them disagree. Thus, it could be concluded that the majority of participants positively rating that using a mobile phone will motivate them to speak English fluently. This high response was supported the mean value (4.18).

At the same time, when participants were asked to show their perceptions regarding the statement that" Using a mobile device will help me brainstorming ideas about different topics" the statistics in table 4, showed that 44.4% of the students sample of the study strongly agree, while 40.0%

do agree, whereas 8.9% were not sure, where those hold negative attitudes comprised 6.7% of the total respondents. Thus, it could conclude that the majority of the students showed positive perceptions regarding that using a mobile phone will help them brainstorming ideas about different topics in learning to the English language.

Regarding the students perceptions the statements numbers: (1-4-2-7-10), it is noticed from table4, that participants agreed with these statements, as their mean values for rating these statement successively come as follows: (4.16,4.13,4.10,4.02, and 3.91) . These statements are as follows:

- Using mobile a phone will increase my vocabulary
- Using a mobile phone will enhance my English learning.
- Using a mobile phone will develop my writing style
- Using a mobile device will help me in sharing ideas, opinions and homework
- Using a mobile device will assist me to record the lesson and send it to my classmates who were absent.

Hence, based on the previous analysis of the sample perceptions regarding the use of mobile devices as a learning tool integrated into class, it is clear that the most important indicators that showed the effectiveness of using a mobile device as a learning tool to be integrated into class include: Using a mobile device will help students to communicate outside the classroom, the use of a mobile phone will help to build the relationship between students and their teachers, using a mobile device will help students to plan better for their learning, in addition to that using a mobile phone will motivate students to speak English fluently .

4.3.2 Research Question Three: What are the benefits of mobile learning in English language learning?

To examine the students' perceptions regarding the benefits of mobile in English language learning, results are presented in table 6 below:

Table (4.5) students' perceptions' regarding the benefits of using mobile in English language learning

			Strongly agree	agree	Uncertain	disagree	Strongly disagree	M	ranking
11	I think a mobile phone will assist my whole learning process	F	32	40	7	4	7	3.96	5
		%	35.6	44.4	7.8	4.4	7.8		
12	I believe using a mobile device is only waiting time and efforts	F	9	7	0	26	48	1.92	8
		%	10.0	7.8	0.0	28.9	53.3		
13	I think using a mobile device in English language learning will make me more productive	F	37	38	4	5	6	4.06	4
		%	41.1	42.2	4.4	5.6	6.7		
14	I think a mobile phone will motivate me to learn English inside and outside the classroom.	F	41	34	2	10	3	4.11	3
		%	45.6	37.8	2.2	11.1	3.3		
15	I believe learning through a	F	9	8	1	42	30	2.1	6

	mobile phone will increase the cost of learning	%	10.0	8.9	1.1	46.7	33.3	6	
16	I believe using a mobile phone in English learning is very effective	F	48	27	3	7	5	4.18	1
		%	53.3	30.0	3.3	7.8	5.6		
17	I believe using a mobile phone in English learning is a type of distraction	F	8	7	2	34	39	2.01	7
		%	8.9	7.8	2.2	37.8	43.3		
18	I think using the mobile phone in English learning is an assistive tool for creativity.	F	47	28	2	6	7	4.13	2
		%	52.2	31.1	2.2	6.7	7.8		
Overall mean								3.32	

The results in table (4.5) illustrates the sample of the study responses regarding the students perceptions in concern of benefits of a mobile in English language learning. It is noticed that the overall mean value reached (3.32), which indicated that the majority of the students' perceptions tend to be neither agree, nor disagree which indicated the existence of some variations between sample responses.

One of the most important benefits of mobile learning is that the majority of students believe that using a mobile phone in English learning is very effective, as 53.3% of the participants strongly agree, while 30.0% agree, whereas 3.3% were not sure, where those with negative attitudes comprised

13.4% of the total member of participants. Therefore, it could be concluded that the majority of the participants with (83.3%) have positive perceptions regarding using a mobile phone in English learning is very effective, as this high response was supported by the overall mean value equal to (4.18).

Regarding the participants' perceptions in concern with the statement No.18 "I think using the mobile phone in English learning is an assistive tool for creativity" the results in table (4.5)showed that there are 52.2% of the participants were strongly agree, whilst 31.1% agree, whereas 2.2% stand at the crossroad, where 14.5% have negatively responding . Hence, it was noticed from the above statistics that the majority of the students with 83.3% confirmed that using the mobile phone in English learning is an assistant tool for creativity. The previous high response of the students was supported by a mean value equal to (4.13) .

The third indicator showing the benefits of a mobile phone in learning English is that "I think a mobile phone will motivate me to learn English inside and outside the classroom." the results in table (5) revealed that there are 45.6% of the students strongly agree, whilst 37.8% agree, whereas 2.2% were not sure, where 14.4% were negatively responding . Therefore, in general, there were 83.4% of the participants positively agreed that they thought that a mobile phone will motivate them to learn English inside and outside the classroom, which was supported by the mean value reaching (4.11) .

On the hand when participant were being asked to show their perceptions regarding the statement No.17 “I believe using a mobile phone in English learning is a type of distraction” the results in table (5) showed that there are ٨.٩% of the students strongly agree that they believe that using a mobile phone in learning is a type of distraction, while 7.5% agreed, whereas 2.2% were not sure, where those disagree comprised 37.8%, and those strongly disagree constitute 43.3%.

Thus, it could be concluded that almost students with 81.1% percent ignored that using a mobile phone in English learning is a type of distraction. The previous negative response was support by the overall mean value equal to (2.01) which indicated that students don’t agree that using a mobile phone in English learning is a type of distraction.

In last, when respondents were being required to specify their perceptions regarding the statement " I believe using a mobile device is only waiting time and efforts " it is clear that there are 10.0% of the respondents strongly agree, whereas 7.8% of them agree, while 28.9% disagree, where the majority with 53.3% strongly disagree. Therefore, the majority of the students with (82.2%) negatively responding that using a mobile device is only wasting time and efforts. The previous negative responses are supported by the mean value (1.92).

In conclusion to the sample of the study perceptions in concern with the benefits of mobile device learning in English language learning, it could be concluded that the most important benefits of mobile learning for learning English language include:

- I believe using a mobile phone in English learning is very effective.

- I think using the mobile phone in English learning is an assistive tool for creativity.
- I think a mobile phone will motivate me to learn English inside and outside the classroom.
- I think using a mobile device in English language learning will make me more productive.

Therefore, the previous results do confirm strongly that using a mobile phone has several benefits for learners, among them it is very effective in learning English language, second it is an assistive tool for creativity, in addition to that it enables students to learn English inside and outside the classroom, furthermore, it will make students more productive to finish their lessons and readings, and assignment and can join their colleagues in sharing knowledge and experience.

4.3.4 Research Question four: What are the barriers that obstruct English language learners from using mobile in their learning process?

To examine the students' perceptions regarding the barriers that obstruct English language learners from using mobile in their learning process results presented in table 4 below:

Table (4.6) showed students' perceptions' regarding the barriers that obstruct English language learners from using mobile devices in their learning process in frequencies, percentages and average mean (M).

			Strongly agree	agree	uncertain	disagree	Strongly disagree	M	Ranking
19	Lack of internet coverage in some classrooms deprives me of using mobile devices in the learning process	F	43	36	11	0	0	4.36	3
		%	47.8	40.0	12.2	0.0	0.0		
20	My English Language teacher prevents me from using a mobile in the classroom	F	60	24	6	0	0	4.60	2
		%	66.7	26.7	6.7	0.0	0.0		
21	The high cost of a mobile hinders me from using it in the classroom	F	33	34	14	9	0	4.01	8
		%	36.7	37.8	15.5	10.0	0.0		

22	The major and rapid development of mobile devices hinder my chances from using updated ones in the classroom	F	57	30	3	0	0	4.60	1
		%	63.3	33.3	3.3	0.0	0.0		
23	Inadequate of teacher knowledge about technology and experience with it limits my mobile usage in the classroom.	F	52	14	14	5	5	4.14	5
		%	57.8	15.6	15.6	5.6	5.6		
24	Small screen and memory size hinder my mobile usage in the classroom	F	47	30	7	5	1	4.30	4
		%	52.2	33.3	7.8	5.6	1.1		
25	The unrestricted use of mobiles (by not being timetabled) in the classroom, hinders me from using one in the classroom	F	1	9	13	31	36	1.98	9
		%	1.1	10.0	14.4	34.4	40.0		
26	Short battery life and small and limited keyboard hinder my mobile usage in the classroom	F	34	41	9	3	3	4.11	6
		%	37.8	45.6	10.0	3.3	3.3		

27	Being easy to lose, misuse and get damage are some obstacles to using mobiles in the classroom	F	38	30	12	7	3	4.03	7
		%	42.2	33.3	13.3	7.8	3.3		
Overall mean								4.01	

The results in table (4.6) illustrates responses of the sample of the study regarding the students perceptions concern with the barriers that obstruct English language learners from using mobile in their learning process , it was obvious from the statistics in the table, that the overall mean value was reaching (4.01), which indicated that the majority of the students sample of the study perceptions tend to agree that there are problems obstruct learners to use a mobile devices in their learning process .

The results in table 6, showed that one of the most important barriers that obstruct English language learners to use a mobile phone in their learning process is the major and rapid development of mobile devices hinder my chances from using updated ones in the classroom, as the mean value of the sample responses is reaching (4.60) supported by that there are 63.3% of the participants strongly agreed, while 33.3% do agree, whereas only 3.3% were not sure.

furthermore, the results in table 6, showed that the second barrier that obstruct English language learners to use a mobile phone to learn English language, is that "My English Language teacher prevents me from using a

mobile in the classroom" as the results revealed that there are 66.7% of the participants strongly agree, while 26.7% agree, whereas 6.7% were not sure. Therefore, it could be concluded that the majority of the participants with (93.4%) do confirm that English language teacher is one of the most important barriers to use a mobile phone to learn English; this high response was supported by the overall mean value equal to (4.60).

in addition to that the third barrier that obstructs learners of English language to uset a mobile device to learn English, is the "Lack of internet coverage in some classrooms deprives me from using mobile devices in the learning process" as there are about 47.8% of the participants strongly agree, whereas 40.0% agreed, while 12.2% of the learners were not sure. Hence, it could be concluded that the majority of learners of English participated in this study do strongly believe that lack of internet coverage in some classrooms deprive some students of using mobile devices in the learning process. These high and positive responses are supported by the mean value (4.36).

the fourth most effective barrier that obstruct learners from using a mobile devices in learning English is the "Small screen and memory size hinder my mobile usage in the classroom" this high response is supported by the sample responses as there are 52.2% strongly agree, while 33.3% were agreed, whereas 7.8% were not sure, where those with negative attitudes comprised 6.7% of the total sample of the current study. The sample responses regarding the effect of the small screen and memory size is a major obstacle that faces learners when using a mobile device in learning English, was supported by the mean value of the sample responses equal to (4.30). this indicated that majority of participants strongly agree that the

small screen and memory size are regarded as one of the most hindering barriers of using a mobile phone in English language learning process.

Furthermore, when participants of the current study were being asked to express their thought regarding "The high cost of a mobile hinders students from using it in the classroom" it was obviously observed there are about 36.7% strongly agree, while 37.8% of them agree, whereas 15.6% were not sure, where 10.0 were disagree. Thus, it could be confirmed that the majority of the students thought that the high cost of mobile hinders them using it in the classroom. This high positive response of the students was supported by the mean value equal to (4.01).

As for responses regarding the statement "The unrestricted use of mobiles (by not being scheduled) in the classroom, hinders me from using one in the classroom" it could be seen that there are just 1.1% strongly agree, while 10.0% were agreed, whereas 14.4% stand at the crossroad, and those with negative perceptions comprised 74.4% in total, among 40.0% strongly disagree. Thus, it could be seen that the majority of students sample of the study don't agree that the unrestricted use of mobiles (by not being scheduled) in the classroom prevents them from using a mobile phone for learning the English language in the classroom.

Therefore, in conclusion, and regarding the students attitudes concerning the most important barriers that obstruct students to use a mobile phone in learning English in the classroom, the most important barriers include:

- The major and rapid development of mobile devices hinder the students' chances of using updated mobiles in the classroom.

- English Language teacher prevents students from using a mobile in the classroom.
- Lack of internet coverage in some classrooms deprives students of using mobile devices in the learning process.
- Small screen and memory size hinders mobile usage in the classroom.

Therefore, the above barriers are regarded as the most important barriers that hinder the students to get benefits of using the mobile devices to learn the English language in the classroom. Hence, these obstacles need to be resolved as quickly as possible to open the way for new and advanced methods that contributing to the improvement of English language learning. In addition to that, the results indicated that English language teachers should be at the top of those who are required to change learning methods for the English language, not to become among the barriers that stand against the development and improvement of learning the English language.

4.3.5 Testing Research Hypotheses

4.3.5.1 Hypothesis one: **Stated that "there is a significant association between using a mobile phone as learning tool integrated into the classroom and the benefits that the student acquired.**

To test this hypothesis, Person's Correlation coefficient is run, and the result was shown as in the table below:

Table4.7, explains the correlation relationship between using a mobile device as a learning tool to be integrated into the classroom, and the benefits of using the mobile device.

Variables	Using a mobile device as a learning tool to be integrated into classroom	
Benefits of using a mobile phone in learning the English language.	Person's correlation	P-value
	0.745**	0.00

** indicated that correlation is significant at the (0.01) level.

The results in the above table, showed the value of correlation coefficient between two variables using a mobile device as a learning tool, and the benefits of using a mobile phone acquired by learners, is reaching (0.745) at a significant level (0.01) which is less than the (0.01) significant level, this indicated that there is statistically significant association between using a mobile device as a learning tool to be integrated into classroom and the benefits of using it obtained by the students learners of English language.

4.3.5.2 Testing Hypothesis Two:

There are various barriers that could obstruct learners to use a mobile device for learning the English language.

To test this hypothesis, Person's correlation coefficient is run, and the results demonstrated in the table below:

Table4.8 shows the correlation relationship between using a mobile device as a learning tool to be integrated into the classroom, and the barriers that obstruct the learners from using mobile devices.

Variables	Using a mobile device as a learning tool to be integrated into classroom	
Barriers obstruct using a mobile phone in learning the English language.	Person's correlation	P-value
	-0.239*	0.023

** indicated that correlation is significant at the (0.05) level.

The results in the above table, showed the value of correlation coefficient between two variables using a mobile device as a learning tool, and the barriers that obstruct using a mobile phone for learning English , is reaching (-0.239) at a significant level (0.023) which is less than the (0.05) significant level. Hence, it could be concluded that there is an inverse correlation relationship between using a mobile device as a learning tool, and the barriers that obstruct using it in learning the English language. This means that there are various barriers that hinder the use of mobile devices in learning the English language.

4.3.5.3 Hypothesis Three: stated that:

"**There are no statistically significant differences between participants' regarding using mobile devices in terms of attitudes, benefits, and barriers, related to age and gender?**

To test this hypothesis, T-test statistics was run and the results demonstrated in the following three tables:

Table (4.9) the results of T-test to compare between students attitudes regarding the use of a mobile phone as a learning tool integrated into classroom by age & gender:

Variables	15-20years (n= 41)		20- to 25 year (n=49)		D F	T-Test	Sig
	Mean	STD	Mean	STD			
Using mobile devices a learning tools integrated into class.	4.27	0.66	4.23	0.67	88	0.236	0.814
	Male (37)		Female (53)		D F	T-Test	Sig
	Mean	STD	Mean	STD	88	1.727-	0.09
	4.11	0.78	4.35	0.55			

** difference is significant at the (0.01) significant level

The result of T-test analysis with the aim to examine if there are statistically significant differences between students perceptions regarding using of mobile devices as a learning tool integrated into class related to age and gender showed that there are no statistically significant variations between students perceptions towards using a mobile phone as a learning tool to be integrated into classroom.

This means that male and female students at different ages are similar in their perceptions and attitudes regarding the use of mobile devices as a learning tool integrated into the class.

Table (4.10) the results of T-test to compare between learners perceptions toward the benefits of using a mobile phone for learning the English language related to age and gender:

Variables	15-20years	20- to 25 year	D F	T-Test	Sig

	(n= 41)		(n=49)				
	Mean	STD	Mean	STD			
The benefits of Using mobile phone in learning English.	3.33	0.27	3.30	0.27	88	0.443	0.66
	Male (37)		Female (53)		D F	T-Test	Sig
	Mean	STD	Mean	STD	88	-1.821	0.072
	3.25	0.29	3.36	0.25			

The result of T-test analysis in table (4.10) doesn't show any statistically significant variations between students' perceptions regarding the benefits of using a mobile phone for learning English language, related to age or gender. That indicated that the students at different age level, or in any gender type, do agree that using a mobile phone has various benefits to users, in particularly for students who learn English.

Table (4.11) shows the results of T-test comparing between learners' perceptions toward the barriers of using mobile phones for learning the English language related to age and gender:

Variables	15-20years (n= 41)		20- to 25 year (n=49)		D F	T-Test	Sig
	Mean	STD	Mean	STD			
The barriers of Using mobile phone in learning English in classroom.	4.02	0.28	4.01	0.29	88	0.288	0.77
	Male (37)		Female (53)		D F	T-Test	Sig
	Mean	STD	Mean	STD	88	0.335	0.74
	4.03	0.32	4.01	0.26			

The result of T-test analysis in the table (4.11) doesn't found any statistically significant differences between students' perceptions regarding the barriers of using a mobile phone for learning the English language in the classroom, related to age or gender. That indicated that the students at different age level, or in any gender type, do agree that there various barriers that obstruct students to use a mobile phone in learning the English language in the classroom.

4.4 Teachers' Interview Data Analysis

4.4.1 Introduction

Personal information data was collected through the first part of the interviews. Respondents were asked to provide their age, gender, and year of experiences and to identify whether they have a mobile phone and internet connection at home or universities. The interviews were conducted with three males and six females that represented English language teachers in three Sudanese governmental universities. All interviews were conducted in the office of the faculty member. Prior to the start of each interview, the study was explained to each participant and each participant signed a consent form, which outlined the purpose of the study and any risks or benefits that may be associated with participation (Appendix C). Interviewees were then asked to give their permission for the interview to be recorded. All participants agreed. The average length of the interview was 20.00 minutes. Recordings were obtained through the use of the researcher's smartphone. Audio files were automatically created at the end of each recording and the researcher transcribed each interview using Word Document.

4.4.2 Analysis

Research questions and codes constructed from the open-ended questions "teacher interviews" used as a basis for interview coding **.**They were coded into four organizational nodes based on the responses. These nodes were: 1) teachers' perceptions and attitudes of the mobile, 2) advantages and benefits of mobile, 3) disadvantages and challenges, 4) barriers of using mobile devices. As with teachers' data, these nodes were extracted from the participant's own words. Each of these categories detailed a unique component of his instructional values and beliefs that directly impacted his or hers or represent factor affecting the use of mobile devices.

4.4.3 Coding

Each participant interview was transcribed and analyzed individually before beginning to cross-reference participant responses for broad themes. Open coding was the primary means of categorizing patterns of thought across participant transcripts (Emerson, Fretz & Shaw, 1995). Substantive categories were drawn from repeated themes among the transcripts and formed into a participant/substantive category matrix. Using participant's own words to label themes ensured that the codes came from the interviews, not my preconceived ideas as a researcher looking for passages to support my own ideas. There were several different connecting strategies available that helped support my data, including the construction of story of learning/teaching vignettes (Maxwell, 2005). Decisions on connecting strategies were ongoing throughout the data analysis phase.

4.4.4 Narratives

Using "excerpted narratives" (Mears, 2009, p. 131) was a method to show connections among participant responses. These narratives were formed by distilling each participant's transcribed responses into narrative form in

order to achieve a deep understanding of individual perspectives. I also used my interview notes and informal conversations as additional references to best portray participant understanding.

Mears,(2009) describes the steps of the distillation method in detail; I used her description as a guideline for my own narrative-distillation process. She suggests that the researcher starts by searching for repeated phrases and themes within and across narratives, similar to other qualitative analysis techniques. As I analyzed the interview data, I discovered repeated themes, which I cataloged using NVivo. Once I had collected relevant sentences and passages supporting the themes, I re-read them carefully and removed non-essential words that did not aid meaning, such as transition words and vocalized pauses. I focused on creating fragments of sentences, which conveyed a speaker's essential meaning without the hindrance of unnecessary words.

Once essential sentence fragments were identified, NVivo was used to list them to resemble as a paragraph. Mears also recommends changing grammatical word forms or replacing nouns with pronouns to create a better flow of understanding in linking phrases. These changes helped to communicate the participants' responses to the research questions more clearly.

4.5 Question one: to what extend teachers are ready to use mobile devices in their teaching process?

Although, the entire faculty members "interviewed" admitted to prohibition any kind of technology in the classroom. The teachers' opinions about mobile learning were mainly very positive. They offer good suggestions and, all of them said that they would need more practice. One teacher with five

years' experience suggested that mobile could be included in and enclosed with the textbook; this would make it easier for teachers to organize mobile learning activities. For example, in response to an interview question about what faculty thought their students were doing with their mobile devices in the classroom. Most of the teachers interviewed were not very confident that they are aware of what is available for educational use on mobile devices. One faculty member stated: With regard to technology and education specifically, I have not kept up too much with apps that have been developed, to be honest, I don't know that much about." Another teacher who has over 20 years' teaching experience. She has short mobile learning experience was very positive, and she decided to try to use mobile in her teaching process. She commented that they already had plenty of material to use, and new tools do not always integrate easily, especially if one is not technically skilled.

The majority of faculty members indicated that they think students are most often using their mobile devices for socialization. One big issue that was also raised in the interviews was the fear and anxiety that teachers need to overcome before they can start to utilize mobile technologies as part of their teaching practice.

Therefore, in conclusion, and regarding the teachers' attitudes concerning the use of mobile devices in the English language learning, the previous results strongly confirm that, the teachers' attitudes about mobile learning were mainly very positive.

4.6. Question two: What are the benefits of mobile learning in English language learning?

When participants of the study were being interviewed to provide their responses regarding the benefits of mobile in English language learning they said that, the students definitely make use of their phones during class. A phone is a great device. It can be used for many educational things like research, texts, dictionary, and even putting in important dates when a homework assignment. One of the staff member with five year experience said "We are preparing students for adult life; we should therefore allow them to use the tools that they will be using in their adult life. If we are preparing our students for life after school, we should allow them to use the tools they will be using when they get there"

Another faculty member of 10 years experiences, she believed that if devices were going to be used for educational purposes that they had to enhance learning in a new way: that some students might use it for skill and drill…like flashcards…and while there is a place for that I think that we can be a bit more clever in thinking about what we could use them for Students .The majority of the participants agreed upon the following benefits of mobile learning:

- learners can access the content at anytime and anywhere.
- Mobile learning can support differentiation of student learning needs and personalized learning.
- Mobile learning can enhance interaction between and among learners and instructors.`````
- The mobile phone can break the ice and increase and extends the time for learning.

4.7 Question three: What are the disadvantages of using mobile in the English language learning?

The respondents' responses regarding the disadvantage of using a mobile device in the classroom, the majority of interviewees said that "The most noticeable disadvantage is that cell phones will be a distraction for students. The students whether they're navigating social media or texting in class, cell phones can be very detrimental to a student's ability to pay attention in class. It can be very tempting to check their e-mails in class instead of listening to a lecture, and allowing students to have cell phones in class is inviting this behavior**.** Moreover, one faculty member thought the ability to have access to information via the mobile anytime, anywhere could be problematic and some moral and cultural issues will be raised.

All respondents agreed that mobile phones will interrupt the entire class. A ringing, beeping, a cell phone can disrupt a test, lecture, or study period. It's difficult for the teachers to count on every student to make sure the cell phone are on silent at all times, and there will definitely be interruptions throughout the day. One of the staff members mentioned that". *According to my opinion, cell phones are a distraction in class and should be strictly forbidden in classrooms*"

Six of nine respondents raised the issue of cheating as one the major disadvantages of mobile phones and they concluded that carrying cell phones at, test times can result in student dishonesty. They said that "*we observed students during exams and we noticed that phones make it very easy for students to share answers, take photos of quizzes or tests, or look up answers online during testing. Some students may take photos of their notes*

or textbooks in order to reference them during testing". Nowadays, cheating becomes a big problem in our universities.

Therefore, the above disadvantages are regarded as the most important problems that hinder the students to get benefits of using the mobile devices to learn the English language in the classroom. Hence, these problems need to be resolved as quickly as possible to open the way for new and advanced technological innovation that contributing to the improvement of the English language learning.

4.8 Question three: What are the barriers that obstruct English language teachers from using mobile devices in their learning process?

When participants of the current study were asked to provide their thought regarding the barriers obstructing them from using mobile devices in their classes. The majority of the participants of the study agreed upon following barriers:

- Lack of mobile related training.
- The Internet connection in different locations is one of a serious problem and it needs awareness of aspects such as availability of Wi-Fi or how much it may cost to download a very large file.
- Clearly, no member of the class should be made to feel disadvantaged either in or out of class, so learning tasks need to be carefully designed so that the desired learning outcomes for learners are not constrained by lack of a smartphone or tablet.
- Lack of Learners' willingness and awareness to use their personal mobile devices as part of their language learning in or out of class.
- The cost of Wi-Fi and availability in the class.

- Lack of an internet access at home for learners and teachers**.**
- Limits of space on learners' devices
- A variety of mobile devices: Most teachers will be confronted with a variety of models, brands and versions of operating systems on devices owned by a group of learners.
- Privacy and appropriateness: Some learners may not be willing to make, or feel comfortable about making or sharing, recordings (video or photography) featuring their own image and voice. Such practices may be culturally inappropriate or forbidden.
- One of the respondents said that "*cost will be a major constraint and it should be considered when proposing the solution*".

Thus, in conclusion, and regarding the teachers' attitudes concerning the most important barriers that obstruct them from using mobile devices, the most important barriers include: the cost, lack of awareness, internet availability, privacy and appropriateness of the mobile devices and rapid development of the mobile devices

Chapter Five
Conclusions, Findings, and Recommendations

5.1 Introduction

This chapter concludes the thesis by answering the research questions proposed at the beginning of the research. Research findings are summarized in this chapter as well. The proposed recommendations and conclusions were drawn from this study. Also, it provides a suggestion for further studies. The findings, conclusions are drawn from this study and recommendations will provide great input to improve and use of mobile devices in all Sudanese Universities.

5.2 Conclusion

This research investigated the factors affecting the use of mobile among the English language college students and explored the different attitudes towards the use of mobile devices for English language learning based on students' gender, age prior mobile learning experience and the benefits of mobile phones in education. Furthermore, the barriers that hinder the use of mobile devices in English language learning were addressed.

5.3 Research Findings

Based on data analysis, in the analysis chapter, the study concluded with the following findings:

1. The results showed that the majority of the students' participants of the study have a mobile phone, and the most of them said that they use it for educational purposes.

2. The results showed that the majority of students with 87.8% have internet access at home or at the university. Which is a good indicator supporting the use of a mobile phone for learning the English language.

3. With regard to the students perception towards the use of a mobile device as a learning tool to be integrated into class, students have positive views towards using a mobile phone as a learning tool, and the most important of these indicators include: Using a mobile device will help students to communicate outside the classroom, the use of a mobile phone will help to build the relationship between students and their teachers, using a mobile device will help students to plan better for their learning, in addition to that using a mobile phone will motivate students to speak English fluently .

5. The results confirm strongly that using a mobile phone has several benefits for learners, among them it is very effective in learning English language, second it is an assistive tool for creativity, in addition to that it enables students to learn English inside and outside the classroom, furthermore, it will make students more productive to

finish their lessons and readings, and assignment and can join their colleagues in sharing knowledge and experience.

5. When students' perceptions regarding the barriers that obstruct English language learners from using mobile devices in their learning process, the results revealed that, the most important barriers include:

1. The major and rapid development of mobile devices hinders the students' chances from using updated mobiles in the classroom.
2. English Language teacher prevents students from using a mobile in the classroom.
3. Lack of internet coverage in some classrooms deprives students of using mobile devices in the learning process.
4. Small screen and memory size hinder my mobile usage in the classroom.

6. The results of T-test aimed to examine if there are statistically significant differences between students perceptions regarding the use of a mobile phone as a learning tool to be integrated into class, found that there are no statistically significant differences between students attitudes related to age, and gender.

7. The study showed that there is no statistically significant difference between students perceptions regarding the benefits of using a mobile phone for learning the English language related they are of similar ages, and gender.

8. Furthermore, there aren't any statistically significant differences between participants' attitudes regarding the barriers that hinder the students from using a mobile phone for learning the English language.

9. There is a statistically significant association between using a mobile device as a learning tool to be integrated into the classroom and the benefits of using it obtained by the students'.

1. The majority of the students explored that there are various barriers hinder the use of a mobile device in learning the English language, and these barriers affect negatively on the use of a mobile device as a learning tool.
2. Concerning the teachers' perceptions regarding the use of mobile devices in their teaching process, the interviews revealed that, the teachers have positive attitudes towards mobile learning.

5.3 Recommendations

Finally, the researcher recommends the following:

1. The government should make a policy statement along with financial support on a national mission on the introduction of ICT particular, mobile learning and its use in universities as well as strategic partnerships with industries, private sectors and non-governmental organizations (NGOs).to support this propsition

2. Universities should have a clear strategy for implementing mobile -learning.
3. Workshops should be held for both students and professors to clarify the educational services of Mobile -learning tools.
4. Regular seminars and courses on the technological practices in education should be provided.
5. Mobile technology should be considered by curriculum designer and material developer.
6. Classes in tertiary education should be supported with an internet connection.

5.4 Suggestions for further research

This research targeted only three Sudanese Universities. More efforts are to extend this research to other Sudanese universities in order to gain a complete and comprehensive vision of attitudes within higher education in Sudan.

Future road for more future studies such as:

1. The impact of mobile learning on students' achievements.
2. Students' readiness toward M-learning.
3. The use of mobile devices as communication tools in education and training.

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Appendix (A)

Sudan University of Science and Technology

College of Graduate Studies

Factors Affecting using Mobile Devices in English Language Learning in Sudanese EFL Context; Perspectives of Learners and Teachers

العوامل التي توثر علي استخدام الجوال في تعلم اللغة الإنجليزية في المجتمع السوداني وجهة نظر

الطلاب وأعضا ء هيئة التدريس

Student's Questionnaire

1437هـ 2016م

Introduction

The purpose of this study is to investigate factors affecting the adoption of mobile learning in the English Language from the perception of learners and teachers in the Departments of English within the Colleges of Education of three Sudanese Government Universities. It also aims to demonstrate the benefits of using mobiles in English language learning and identify the barriers that hinder learners from mobile learning adoption.

Rest assured that all information gained from this study will be dealt with utmost confidentiality. The results of this study will only be used for academic purposes and any personal information will ever be revealed in the report.

Thanks in advance for your contribution

Part one:

General information

- ✓ **Please choose the most applicable to you in each instance**

1) **Gender**: a) Male [ ] b) Female [ ]

2) **Age:** 15 –20 years [ ] 20--- 25 years [ ] 30 and more [ ]

- ✓ **Connectivity and access to technological resources**

Do you have a mobile phone? Yes [ ] No [ ]

Have you ever used your mobile for educational purposes? Yes [ ] No [ ]

Do you have an internet access at home? Yes [ ] No [ ]

Do you have an internet access at the University? Yes [ ] No [ ]

Definitions

Mobile Learning (M-Learning): learning which takes place via wireless devices such as Smart Phones, PDAs and Tablet PCs. Due to their portable nature, these devices facilitate learning at any place and time for the learner.

Please tick (√) the answer of your choice to show the extent to which you agree or disagree with any of the statements below:

Keys 1(Strongly agree**) 2 (**Agree**) 3 (**Not sure**) 4 (**Disagree) **5 (**Strongly disagree**)**

What are the benefits of using mobile learning in English language learning?

No	**Statements**	**5**	**4**	**3**	**2**	**1**
1	Using mobile a phone will increase my vocabulary					
2	Using a mobile phone will develop my writing style					
3	Using a mobile phone will motivate me to speak English fluently					
4	Using a mobile phone will enhance my English learning.					
5	The use of a mobile phone will help to build the relationship between me and my teachers					
6	Using a mobile device will help me to plan better for my learning					
7	Using a mobile device will help me in sharing ideas, opinions and homework					
8	Using a mobile device will help me brainstorming ideas about different topics					

9	Using a mobile device will help me to communicate outside the classroom					
10	Using a mobile device will assist me to record the lesson and send it to my classmates who were absent					

2. What is the learners' attitude towards the adoption of mobile learning in their learning process?

No	Statements	5	4	3	2	1
1	I think a mobile phone will assist my whole learning process					
2	I believe using a mobile device is only wasting time and efforts					
3	I think using a mobile device in English language learning will make me more productive					
4	I think a mobile phone will motivate me to learn English inside and outside the classroom.					
5	I believe learning through a mobile phone will increase the cost of learning					
6	I believe using a mobile phone in English learning is very effective					
7	I believe using a mobile phone in English learning is a type of distraction					
8	I think using the mobile phone in English learning is an assistive tool for creativity.					

3. What are the barriers which may obstruct English Language learners from mobile learning adoption in their learning process?

No	Statements	5	4	3	2	1
1	Lack of internet coverage in some classrooms deprives me from using mobile devices in the learning process					
2	My English Language teacher prevents me from using a mobile in the classroom					
3	The high cost of a mobile hinders me from using it in the classroom					
4	The major and rapid development of mobile devices hinder my chances from using updated ones in the classroom					
5	Inadequate teacher knowledge about technology and experience limits my mobile usage in the classroom.					
6	Small screen and memory size hinder my use of mobile phone in the classroom					
7	The unrestricted use of mobiles (by not being timetabled) in the classroom, hinders me from using one in the classroom					
8	Short battery life and small and limited keyboard hinder my mobile usage in the classroom					
9	Being easy to lose, misuse and get damage are some obstacles to using mobiles in the classroom					

Appendix (B)

Sudan University of Science and Technology

College of Graduate Studies

Factors Affecting the use of Mobile Devices in English Language Learning in Sudanese EFL Context; Perspectives of Learners and Teachers

العوامل التي توثر علي استخدام الجوال في تعلم اللغة الإنجليزية في المجتمع السوداني وجهة نظر

الطلاب وأعضا ء هيئة التدريس

Teacher's interview

1437هـ 2016

Introduction

The purpose of this study is to investigate factors affecting the adoption of mobile learning in the English Language from the perception of learners and teachers in the Departments of English within the Colleges of Education of three Sudanese Government Universities. It also aims to demonstrate the benefits of using mobiles in English language learning and identify the barriers that hinder learners from mobile learning adoption.

Your contribution in this study leads to clear understanding of English language learners' and teachers' attitudes of mobile learning adoption in English language learning. Your valuable contribution also assists the research to draw exact picture which may help in developing clear strategy towards well utilizing of mobile learning in teaching process and improvement of teaching standards in our universities in order to cope with new innovation and catch the technological invention in education.

Be sure that all information gained from this study will be dealt with utmost confidentially. The results of this study will only be used for academic purposes and any personal information will never be identified at the report.

Feel free to give your opinion to the following questions, there is no right or wrong answer your answers represent your opinion and it is used only for academic purpose.

Part one: Personal information

Please tick (√) the answer of your choice.

Gender: Male [ ] Female [ ]

Years of teaching experience

1 –5 years [ ] 5---10 years [ ] 10 -15 years 15 -20 [ ] 20 and more [ ]

Connectivity and access to technological resources

Do you have a mobile phone? Yes [ ] No [ ]

Have you ever used your mobile for teaching purposes? Yes [ ] No [ ]

Do you have an internet access at the University? Yes [ ] No [ ]

Do you have an internet access at the University? Yes [ ] No [ ]

Part two: **Interviews Questions**

This is a face to face interview

1. Can you tell me about your experiences with mobile learning in your class?
2. Can you elaborate on possible advantages of using mobile learning?
3. Can you elaborate on possible disadvantages of using mobile learning?
4. In your own point of view, what are the main difficulties that might face the students to adopt the M-learning in English language learning process?
5. Why do you think some teachers might earlier adopt mobile learning while others resist this technology?
6. How does mobile learning address your learners' needs?
7. How is learning through mobile devices different from other instructional mediums?
8. Please provide additional comment on experience of using mobile learning
9. What do you use mobile for (in the classroom?)

Thank you so much for your valuable input in this study.

Sudan University of Science and Technology

College of Graduate Studies

Consent Form

Appendix (C)

Dear colleagues, I'm currently enrolled in the Ph.D. Program in applied linguistics at Sudan University of Science and Technology (SUST). The purpose of this study is to investigate factors affecting the use of mobile device in the English Language in Sudanese EFL context from the perception of learners and teachers in the Departments of English within the Colleges of Education of three Sudanese Government Universities. It also aims to demonstrate the benefits of using mobiles in English language learning and identify the barriers that hinder learners from mobile learning adoption. **I** am also exploring the attitudes of students and teachers towards the Mobile learning adoption in English language learning. Then, the 90 English language learners will be given questionnaires in order to gain their response. Finally, an interview will be conducted with fifteen English language teachers in order to know their perception of mobile learning. All the contacts, questionnaire and interview findings, and personal

information in this study will be kept strictly confidential in my reports. If you have any questions, please do not hesitate to contact me or my thesis supervisor, Dr. Ishraga Bashir. Thank you in advance for your help and cooperation.

Ezzelden Ibrahim Mohammed

Sudan University of Science and Technology, izeldeen@sust.edu mobile: +249 9134455554

I have read the above information. I hereby give my consent for the data acquired to be used by Ezzelden Ibrahim Mohammed Ibrahim in this thesis.

Date:

……

Signature:……

Appendix (D)

Statistical Analyses

Correlations

		Total scores using a mobile phone as a learning tool	Total scores benefit from using a mobile phone for learning English	Total scores of barriers that hinder students to adopt using a mobile phone
Total scores using a mobile phone as a learning tool	Pearson Correlation	1	.745**	-.239-*
	Sig. (2-tailed)		.000	.023
	N	90	90	90
Total scores benefit from using a mobile phone for learning English	Pearson Correlation	.745**	1	-.110-
	Sig. (2-tailed)	.000		.302
	N	90	90	90
Total scores of barriers that hinder students to adopt using a mobile phone	Pearson Correlation	-.239-*	-.110-	1
	Sig. (2-tailed)	.023	.302	
	N	**90**	**90**	**90**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Frequency Table

Using mobile a phone will increase students' vocabulary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3.3	3.3	3.3
	Disagree	6	6.7	6.7	10.0
	Not sure	7	7.8	7.8	17.8
	Agree	32	35.6	35.6	53.3
	Strongly agree	42	46.7	46.7	100.0
	Total	90	100.0	100.0	

Using a mobile phone will develop my writing style

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	2	2.2	2.2	2.2
	Disagree	9	10.0	10.0	12.2
	Not sure	5	5.6	5.6	17.8
	Agree	36	40.0	40.0	57.8
	Strongly agree	38	42.2	42.2	100.0
	Total	90	100.0	100.0	

Using a mobile phone will motivate learners to speak English fluently

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	9	10.0	10.0	10.0
	Not sure	8	8.9	8.9	18.9
	Agree	31	34.4	34.4	53.3
	Strongly agree	42	46.7	46.7	100.0
	Total	90	100.0	100.0	

Using a mobile phone will enhance English language learning.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	7.8	7.8	7.8
	Disagree	5	5.6	5.6	13.3
	Not sure	4	4.4	4.4	17.8
	Agree	27	30.0	30.0	47.8
	Strongly agree	47	52.2	52.2	100.0
	Total	90	100.0	100.0	

The use of a mobile phone will help to build the relationship between me and my teachers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	1.1	1.1	1.1
	Disagree	1	1.1	1.1	2.2
	not sure	1	1.1	1.1	3.3
	Agree	32	35.6	35.6	38.9
	strongly agree	55	61.1	61.1	100.0
	Total	90	100.0	100.0	

Using a mobile device will help me to plan better for my learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	6	6.7	6.7	6.7
	Not sure	10	11.1	11.1	17.8
	Agree	26	28.9	28.9	46.7
	Strongly agree	48	53.3	53.3	100.0
	Total	90	100.0	100.0	

Using a mobile device will help me brainstorming ideas about different topics

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	5.6	5.6	5.6
	Disagree	1	1.1	1.1	6.7
	Not sure	8	8.9	8.9	15.6
	Agree	36	40.0	40.0	55.6
	Strongly agree	40	44.4	44.4	100.0
	Total	90	100.0	100.0	

Using a mobile device will help me to communicate outside the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not sure	1	1.1	1.1	1.1
	Strongly Agree	89	98.9	98.9	100.0
	Total	90	100.0	100.0	

Using a mobile device will assist me to record the lesson and send it to my classmates who were absent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1.1	1.1	1.1
	Disagree	5	5.6	5.6	6.7
	Not sure	16	17.8	17.8	24.4
	Agree	47	52.2	52.2	76.7
	Strongly agree	21	23.3	23.3	100.0
	Total	90	100.0	100.0	

I think a mobile phone will assist my whole learning process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	7	7.8	7.8	7.8
	Disagree	4	4.4	4.4	12.2
	Not sure	7	7.8	7.8	20.0
	Agree	40	44.4	44.4	64.4
	Strongly agree	32	35.6	35.6	100.0
	Total	90	100.0	100.0	

I believe using a mobile device is only wasting for time and efforts

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	48	53.3	53.3	53.3
	Disagree	26	28.9	28.9	82.2
	Agree	7	7.8	7.8	90.0
	Strongly agree	9	10.0	10.0	100.0
	Total	90	100.0	100.0	

I think using a mobile device in English language learning will make me more productive

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	6	6.7	6.7	6.7
	Disagree	5	5.6	5.6	12.2
	Not sure	4	4.4	4.4	16.7
	Agree	38	42.2	42.2	58.9
	strongly agree	37	41.1	41.1	100.0
	Total	90	100.0	100.0	

I think a mobile phone will motivate me to learn English inside and outside the classroom.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3.3	3.3	3.3
	Disagree	10	11.1	11.1	14.4
	Not sure	2	2.2	2.2	16.7
	Agree	34	37.8	37.8	54.4
	Strongly agree	41	45.6	45.6	100.0
	Total	90	100.0	100.0	

I believe learning through a mobile phone will increase the cost of learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	30	33.3	33.3	33.3
	Disagree	42	46.7	46.7	80.0
	Not sure	1	1.1	1.1	81.1
	Agree	8	8.9	8.9	90.0
	Strongly agree	9	10.0	10.0	100.0
	Total	90	100.0	100.0	

I believe using a mobile phone in English learning is very effective

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	5.6	5.6	5.6
	Disagree	7	7.8	7.8	13.3
	Not sure	3	3.3	3.3	16.7
	Agree	27	30.0	30.0	46.7
	Strongly agree	48	53.3	53.3	100.0
	Total	90	100.0	100.0	

I believe using a mobile phone in English learning is a type of distraction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	39	43.3	43.3	43.3
	Disagree	34	37.8	37.8	81.1
	Not sure	2	2.2	2.2	83.3
	Agree	7	7.8	7.8	91.1
	Strongly agree	8	8.9	8.9	100.0
	Total	90	100.0	100.0	

I think using the mobile phone in English learning is an assistive tool for creativity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	7.8	7.8	7.8
	Disagree	6	6.7	6.7	14.4
	Not sure	2	2.2	2.2	16.7
	Agree	28	31.1	31.1	47.8
	Strongly agree	47	52.2	52.2	100.0
	Total	90	100.0	100.0	

Lack of internet coverage in some classrooms deprives me from using mobile devices in the learning process

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not sure	11	12.2	12.2	12.2
	Agree	36	40.0	40.0	52.2
	Strongly agree	43	47.8	47.8	100.0
	Total	90	100.0	100.0	

My English Language teacher prevents me from using a mobile in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not sure	6	6.7	6.7	6.7
	Agree	24	26.7	26.7	33.3
	Strongly agree	60	66.7	66.7	100.0
	Total	90	100.0	100.0	

The high cost of a mobile hinders me from using it in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	9	10.0	10.0	10.0
	Not sure	14	15.6	15.6	25.6
	Agree	34	37.8	37.8	63.3
	Strongly agree	33	36.7	36.7	100.0
	Total	90	100.0	100.0	

The major and rapid development of mobile devices hinder my chances from using updated ones in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not sure	3	3.3	3.3	3.3
	Agree	30	33.3	33.3	36.7
	Strongly agree	57	63.3	63.3	100.0
	Total	90	100.0	100.0	

Inadequate of teacher knowledge about technology and experience with it limits my mobile usage in the classroom.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	5	5.6	5.6	5.6
	Disagree	5	5.6	5.6	11.1
	Not sure	14	15.6	15.6	26.7
	Agree	14	15.6	15.6	42.2
	Strongly agree	52	57.8	57.8	100.0
	Total	90	100.0	100.0	

Small screen and memory size hinder my mobile usage in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1.1	1.1	1.1
	Disagree	5	5.6	5.6	6.7
	Not sure	7	7.8	7.8	14.4
	Agree	30	33.3	33.3	47.8
	Strongly agree	47	52.2	52.2	100.0
	Total	90	100.0	100.0	

The unrestricted use of mobiles (by not being timetabled) in the classroom, hinders me from using one in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	36	40.0	40.0	40.0
	Disagree	31	34.4	34.4	74.4
	Not sure	13	14.4	14.4	88.9
	Agree	9	10.0	10.0	98.9
	Strongly agree	1	1.1	1.1	100.0
	Total	90	100.0	100.0	

Short battery life and small and limited keyboard hinder my mobile usage in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3.3	3.3	3.3
	Disagree	3	3.3	3.3	6.7
	Not sure	9	10.0	10.0	16.7
	Agree	41	45.6	45.6	62.2
	Strongly agree	34	37.8	37.8	100.0
	Total	90	100.0	100.0	

Being easy to lose, misuse and get damage are some obstacles to using mobiles in the classroom

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	3	3.3	3.3	3.3
	Disagree	7	7.8	7.8	11.1
	Not sure	12	13.3	13.3	24.4
	Agree	30	33.3	33.3	57.8
	Strongly agree	38	42.2	42.2	100.0
	Total	90	100.0	100.0	

Descriptive Statistics

Descriptive Statistics

	N	Mean	Std. Deviation
Using mobile a phone will increase my vocabulary	90	4.1556	1.04839
Using a mobile phone will develop my writing style	90	4.1000	1.03912
Using a mobile phone will motivate me to speak English fluently	90	4.1778	.96661
Using a mobile phone will enhance my English learning.	90	4.1333	1.21969
The use of a mobile phone will help to build the relationship between me and my teachers	90	4.5444	.68959
Using a mobile device will help me to plan better for my learning	90	4.2889	.91485
Using a mobile device will help me in sharing ideas, opinions and homework	90	4.0222	.77862
Using a mobile device will help me brainstorming ideas about different topics	90	4.1667	1.03044
Using a mobile device will help me to communicate outside the classroom	90	4.9778	.21082
Using a mobile device will assist me to record the lesson and send it to my classmates who were absent	90	3.9111	.85649
Valid N (listwise)	90		

Descriptive Statistics

	N	Mean	Std. Deviation
Using a mobile device will help me to communicate outside the classroom	90	4.9778	.21082
The use of a mobile phone will help to build the relationship between me and my teachers	90	4.5444	.68959
Using a mobile device will help me to plan better for my learning	90	4.2889	.91485
Using a mobile phone will motivate me to speak English fluently	90	4.1778	.96661
Using a mobile device will help me brainstorming ideas about different topics	90	4.1667	1.03044
Using mobile a phone will increase my vocabulary	90	4.1556	1.04839
Using a mobile phone will enhance my English learning.	90	4.1333	1.21969
Using a mobile phone will develop my writing style	90	4.1000	1.03912
Using a mobile device will help me in sharing ideas, opinions and homework	90	4.0222	.77862
Using a mobile device will assist me to record the lesson and send it to my classmates who were absent	90	3.9111	.85649
Valid N (listwise)	90		

Descriptive Statistics

	N	Mean	Std. Deviation
I think a mobile phone will assist my whole learning process	90	3.9556	1.15058
I believe using a mobile device is only wasting time and efforts	90	1.9222	1.32587
I think using a mobile device in English language learning will make me more productive	90	4.0556	1.13535
I think a mobile phone will motivate me to learn English inside and outside the classroom.	90	4.1111	1.10611
I believe learning through a mobile phone will increase the cost of learning	90	2.1556	1.26234
I believe using a mobile phone in English learning is very effective	90	4.1778	1.16675
I believe using a mobile phone in English learning is a type of distraction	90	2.0111	1.25863
I think using the mobile phone in English learning is an assistive tool for creativity.	90	4.1333	1.22887
Valid N (listwise)	90		

Descriptive Statistics

	N	Mean	Std. Deviation
I believe using a mobile phone in English learning is very effective	90	4.1778	1.16675
I think using the mobile phone in English learning is an assistive tool for creativity.	90	4.1333	1.22887
I think a mobile phone will motivate me to learn English inside and outside the classroom.	90	4.1111	1.10611
I think using a mobile device in English language learning will make me more productive	90	4.0556	1.13535
I think a mobile phone will assist my whole learning process	90	3.9556	1.15058
I believe learning through a mobile phone will increase the cost of learning	90	2.1556	1.26234
I believe using a mobile phone in English learning is a type of distraction	90	2.0111	1.25863
I believe using a mobile device is only wasting for time and efforts	90	1.9222	1.32587
Valid N (listwise)	90		

Descriptive Statistics

	N	Mean	Std. Deviation
Lack of internet coverage in some classrooms deprives me from using mobile devices in the learning process	90	4.3556	.69203
My English Language teacher prevents me from using a mobile in the classroom	90	4.6000	.61443
The high cost of a mobile hinders me from using it in the classroom	90	4.0111	.96564
The major and rapid development of mobile devices hinder my chances from using updated ones in the classroom	90	4.6000	.55688
Inadequate of teacher knowledge about technology and experience with it, limits my mobile usage in the classroom.	90	4.1444	1.20450
Small screen and memory size hinder my mobile usage in the classroom	90	4.3000	.91737
The unrestricted use of mobiles (by not being timetabled) in the classroom, hinders me from using one in the classroom	90	1.9778	1.02746
Short battery life and small and limited keyboard hinder my mobile usage in the classroom	90	4.1111	.95334
Being easy to lose, misuse and get damage are some obstacles to using mobiles in the classroom	90	4.0333	1.08566
Valid N (listwise)	90		

Descriptive Statistics

	N	Mean	Std. Deviation
The major and rapid development of mobile devices hinder my chances from using updated ones in the classroom	90	4.6000	.55688
My English Language teacher prevents me from using a mobile in the classroom	90	4.6000	.61443
Lack of internet coverage in some classrooms deprives me from using mobile devices in the learning process	90	4.3556	.69203
Small screen and memory size hinder my mobile usage in the classroom	90	4.3000	.91737
Inadequate of teacher knowledge about technology and experience with it limits my mobile usage in the classroom.	90	4.1444	1.20450
Short battery life and small and limited keyboard hinder my mobile usage in the classroom	90	4.1111	.95334
Being easy to lose, misuse and get damage are some obstacles to using mobiles in the classroom	90	4.0333	1.08566
The high cost of a mobile hinders me from using it in the classroom	90	4.0111	.96564
The unrestricted use of mobiles (by not being timetabled) in the classroom, hinders me from using one in the classroom	90	1.9778	1.02746
Valid N (listwise)	90		

T-Test

Group Statistics

	Sample distributed according to gender	N	Mean	Std. Deviation	Std. Error Mean
T11	Male	37	4.1054	.77851	.12799
	Female	53	4.3472	.55074	.07565

Independent Samples Test

	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	12.516	.001	-1.727-	88	.088	-.24176-	.14002	-.52002-	.03649	
Equal variances not assumed			-1.626-	60.441	.109	-.24176-	.14867	-.53911-	.05558	

Group Statistics

	Sample distributed according to age	N	Mean	Std. Deviation	Std. Error Mean
T11	15-20 years	41	4.2659	.65674	.10257
	20-25 years	49	4.2327	.67063	.09580

Independent Samples Test

		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	
T11	Equal variances assumed	.255	.615	.236	88	.814	.03320	.14061	-.24624-	.31264	
	Equal variances not assumed			.237	85.813	.814	.03320	.14035	-.24581-	.31222	

Group Statistics

	Sample distributed according to age	N	Mean	Std. Deviation	Std. Error Mean
T22	15-20 years	41	3.3293	.27494	.04294
	20-25 years	49	3.3036	.27362	.03909

Independent Samples Test

		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
T22	Equal variances assumed	.070	.792	.443	88	.659	.02570	.05804	-.08965-	.14104
	Equal variances not assumed			.443	85.078	.659	.02570	.05807	-.08975-	.14115

Group Statistics

	Sample distributed according to gender	N	Mean	Std. Deviation	Std. Error Mean
T22	Male	37	3.2534	.29387	.04831
	Female	53	3.3585	.25124	.03451

Independent Samples Test

		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
T33	Equal variances assumed	.003	.954	.288	88	.774	.01759	.06109	-.10382-	.13899
	Equal variances not assumed			.289	86.389	.773	.01759	.06085	-.10337-	.13855

Group Statistics

	Sample distributed according to age	N	Mean	Std. Deviation	Std. Error Mean
T33	15-20 years	41	4.0244	.28165	.04399
	20-25 years	49	4.0068	.29433	.04205

Group Statistics

	Sample distributed according to gender	N	Mean	Std. Deviation	Std. Error Mean
T33	Male	37	4.0270	.32011	.05263
	Female	53	4.0063	.26457	.03634