Using Mobile Technology to Foster Autonomy among Language Learners

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Author's Declaration

I certify that, to the best to my knowledge, all the material in this thesis represents my own work and that no material is included which has been submitted for any other award or qualification. This thesis contains material which has already appeared in the following publication:

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Abstract

Much has been written about the value of Learner autonomy in language teaching and learning as it is believed to enhance students' opportunities of success, enable life-long learning, and increase motivation. Extensive research has been dedicated to the investigation of different ways of fostering learner autonomy in language learning and teaching. However, it is not easy to encourage learners to be more independent, motivated, and committed, especially in a teacher-centred educational context. Therefore, this study seeks to explore how learner autonomy can be encouraged in support of language learning at a University in Saudi Arabia by incorporating the use of tablet devices into a language course.

It is necessary to establish whether the iPad and iPad-like devices can contribute to developing student autonomy in language learning. More specifically, the study attempts to explore whether the multi-modal functionality and affordances of the iPad, when used in a Mobile Assisted Language Learning environment as part of a teacher-guided EFL (English for Foreign Learners) course, can encourage and motivate students to become more independent and take control over their learning.

The study was carried out in the context of a 12-week deployment of the iPad device in the Community College at Imam Abdulrahman Bin Faisal University (Previously Dammam University) with a group of 21 Saudi university students. Data was gathered from questionnaires, focus group interview, student diaries, think aloud protocol, and online tracker.
The findings indicate that students used a wide range of cognitive, metacognitive, and social strategies when working with the iPad, and there was a statistically significant increase in students' reported use of language learning strategies by the end of the project. The study also provides evidence that the use of the iPad when integrated carefully into a language course, and with the teacher's instruction, can have positive effects on students' attitude and learning. There is evidence that these effects extended beyond the end of the course, as post –course interviews suggest that students continued to develop certain types of autonomous behaviour. They displayed a desire to continue to learn English despite the difficulties they encountered in the course. In addition, most students planned to do more practice outside classroom, collaborate with other students, and reflect on their personal beliefs about language learning. Based on these findings, there seem to be clear benefits to integrating the iPad into language courses.

Dedication

To my husband Sami Alborhan

With love

Acknowledgements

بــــــسم الله الرحمــن الرحيــــــم

In The Name Of Allah, The Beneficent, The Merciful

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List of Abbreviations

EFL	English as a Foreign Language
IABF	Imam Abdulrahman Bin Faisal University
ML	Mobile Learning
MALL	Mobile Assisted Language Learning
TESOL	Teaching English to Speakers of Other Languages
MOE	The Ministry of Education
MOHE	The Ministry of Higher Education
CALL	Computer Assisted Language Learning
ZPD	The Zone of Proximal Development
MKO	More Knowledgeable Other
LLSs	Language Learning Strategies
SCT	Sociocultural Theory
BQ	Background Questionnaire
SILLG	Strategy Inventory for Language Learning\ Generic version Questionnaire
SILLIP	Strategy Inventory for Language Learning \ iPad Specific Version Questionnaire
TAP	Think aloud protocol
APP	Application
E-Book	Electronic Book
OUP	Oxford University Press
SPSS	Statistical Package for Social Sciences Software

Chapter 1: Introduction

1.1 General Introduction

In Saudi Arabia, technology assisted learning is attracting the attention of some enthusiastic instructors leading to attempts to develop technology-based learning activities and integrate them into their teaching practice. Such instructors realise the importance of addressing learners' needs, especially those who have been born in the digital and mobile age and hold different views about learning than their predecessors. For example, in his study of the predicaments of EFL (English for foreign learners) learning in Saudi Arabia, Liton (2012) suggests using technological aids to support learners by exposing them to content that will compensate for the lack of English exposure, increase students' motivation, and enhance their desire to learn the target language.

Therefore, higher educational institutions have realised the need for change and started to rethink the current educational system and its pedagogical practice. Instead, the potential to incorporate technology, in particular mobile devices, to meet the needs of both learners and teachers is being considered. The deployment of this form of technology-enhanced learning in higher education, however, necessitates an investigation into its ability and potential to deliver customised learning experience to diverse learners.

1.2 Statement of the Problem

Global attention has been directed toward teaching and learning of the English language as it becomes the language of academic discourse. The situation in Saudi Arabia is no exception. The expansion of scientific specialisations, such as medicine, applied sciences, nursing, dentistry, engineering, and computing, calls for intensive English language courses across universities and colleges in order to supplement Saudi students with the language skills needed to cope with the requirements of their programme. Indeed, acceptance on such programmes is in part determined by students' English proficiency level as those learners are expected to communicate, share, and transfer their scientific and technological knowledge.

However, despite the significance of teaching and learning English in Saudi educational institutions, and the support such programmes received from the government, the learning outcomes are unsatisfactory (Liton, 2012; Khan, 2011). It is observed that despite students having studied for some years at university level, graduated from university and completed their studies, they are unable

to use the target language sufficiently (Syed, 2003). This low level of proficiency was noted in Rahman's study (2011, p. 383), who stated

Although teaching English in Saudi has been changing and improving, after seven years of English studying, the undergraduate students fail to acquire English language proficiency, hence, unable to use it in the real life situation

The above mentioned situation of EFL in Saudi Arabia can be attributed to several issues with the teaching methodology of English language across the educational system (Abahussain, 2016). A key factor is the traditional teaching method adopted in many schools and higher education institution in teaching English: teachers focus on teaching grammar, reading, writing, and vocabulary with little attention being paid to listening and speaking skills (Alsaedi, 2012; Alrashidi and Phan, 2015). Such traditional teaching methods have resulted in depriving students of classroom interaction as the focus is on the product of learning rather than the process (Khan, 2011; Al-Mohanna, 2011).

In terms of the assessment procedure in such a system, the only measure to check students' progress in the target language is the final exam in which students are required to show their mastery of the skills covered during the semester relating mainly to what is covered in the textbook. In terms of speaking skills, students' progress is checked in an oral speaking test in which they are given specific topics before the exam to prepare for. During the exam, they are expected to answer several questions related to two of these topics and given marks accordingly based on the extent to which they are able to deliver accurate answers in terms of pronunciation, grammar, and range of vocabulary. Such a test has deprived students of opportunities to engage in active communication.

What is more, teachers tend to be reluctant to use new teaching approaches, particularly those that involve implementing technology in their learning courses. Alzahrani (2015) attributed teachers' negative view of technology to the Saudi pre-service teacher educational guidelines, aims, and objectives, which fails to prepare teachers for any effective technology integration. Alahmari and Blankson (2016), who investigated teachers' readiness for technology integration, identified other factors that hinder the implementation of technology in Saudi schools. Such factors included a lack of enough technology resources, teacher training; and time constraints.

Another contributor to the situation of EFL in Saudi Arabia is that classrooms are dominated by teacher-centred instruction in which teachers play the leading role in the classroom (Alsaedi, 2012). The teacher in a language class is expected to spend the 45 minutes of class time illustrating new vocabulary, explaining grammar formula, writing new sentences and making other notes on the board. Students, on the other hand, are expected to sit and listen, receive new information, copy

what is written on the board and go home to memorise them. According to Hamad (2013), students in EFL classrooms in Saudi Arabia have limited opportunities to practise English due to the nature of classroom interaction, which is dominated by teacher-talk. He went on to describe the situation in EFL classrooms in the context of Saudi Arabia in which teachers lead classroom discussion and disregard students' initiation of any unplanned topics and limit their participation to one word answers. Similarly, Al-Ahaydib (1986) argued that one of the reasons for students' lack of classroom participation is the dominant role of the teacher in Saudi classrooms. In fact, the task of practising speaking and listening is largely left to students with little academic support inside the classroom and limited input outside the classroom as English is not used as a means of everyday communication (Alrashidi and Phan, 2015; Alhawsawi, 2013; Al-Johani, 2009; Khan, 2011). Alsaeid (2011) in her study found that Saudi students preferred to work alone more than working with others and she attributed this to students' passive role in the classroom along with the limited exposure to group work that discouraged them from participating. Results of many studies indicated the negative impact of students' educational experience would have on their motivation to learn the language (Razak, 2000; Beder and Valentine, 1990; Moya, 2014; Hayes, 2003). In a study of the barriers to practising speaking in Saudi classrooms, Alhmadi (2014) provides a description of English teaching and learning status in Saudi Arabia as she states,

student motivation has been compromised by the Ministry of Educations' rigid English curriculum: for their foundation year at university, students must spend many hours in a classroom each day, with the same teacher, trying to get through the strict textbook. Neither teachers nor students are allowed to deviate from the course, causing both [sic] a huge loss in motivation. Teachers cannot use their own initiative or introduce topics that might be more relevant to their students' personal lives, and learning English becomes a race to get the textbook finished in time for exams at the end of the year. Speaking is not prioritised at all, in fact, the exams only come in written form, and students are not encouraged to talk to each other in English inside and outside the classroom (p. 51).

Another factor is the increasing number of students enrolling for university education each year, which results in large overcrowded classrooms. This creates a serious problem for many teachers, as they are unable to meet students' communicative and educational needs. Alongside this, teachers are required to complete the course syllabus in an allotted time, which makes it difficult for them to allocate time to activities that are not directly related to the course curricula.

There is also a lack of language labs or where language labs have been introduced, poor maintenance in order to operate these labs, a lack of authentic language learning materials meaning the main focus

is on the textbook, and a lack of book stores and libraries either inside or outside classrooms which provide English learning materials and books.

In addition, within Saudi universities, there has been a very wide gap between the highest and the lowest levels of English achieved by students and this is due at least in part to the number of students accompanying their parents in scholarships provided by the government to study abroad. Those students have had the opportunity to study at schools in a foreign country before embarking on a degree programme in Saudi universities, which leaves their English proficiency level great strides ahead of their peers taking the same degree but having studied in Saudi schools. This situation has resulted in inequality in terms of admission to some degrees requiring a high level of English proficiency, such as medicine; and in job opportunities after graduation. As a result, some students withdraw from university after the preparatory year if they do not achieve the required marks in their English course.

The shortcomings of English teaching in Saudi Arabia urge a change in the current educational system. There is a need to make use of new teaching methods, such as mobile assisted language learning (MALL hereafter) in which mobile devices can be used as a medium to deliver and facilitate such learning instruction. This new teaching method can help teachers to cope with the increasing number of students, to shift the current conventional teacher-centred classroom to be more dynamic and involve students in active and more independent learning. Likewise, students need to be equipped with the skills to accommodate their needs and expand their practice of the language learning beyond the class time and space. Developing students' autonomous language learning via the use of tablet devices can enable them to maximise their learning outside class and be better language learners by exploiting the available learning materials and resources.

However, the question is not of leaving students to themselves but of guiding and giving them a reason to work as an active agent and take responsibility for their own learning.

1.3 Aims of the Study

The study is therefore intended to explore how learner autonomy can be encouraged in support of language learning at a University in Saudi Arabia by integrating tablet-based activities into a teacher-guided EFL course. The aim of using mobile devices was to tackle a number of teaching and learning issues, which influence the exposure of language learners to learning opportunities, such as time and space restrictions, lack of authentic teaching and learning materials, and an exam-oriented education system. Furthermore, the study was carried out to provide the following information: the

potential of tablet devices to supplement English language learning and teaching, and the potential of tablet devices to complement the university teaching syllabus.

The study focuses on an under-researched issue in mobile-assisted language learning literature: how language learners use tablet devices as part of their routine daily language learning practice. In addition, the study explores issues relating to the integration of mobile technology into university classrooms and how this changes the traditional student-teacher dynamic.

1.4 Research Questions

The study seeks to answer the main research question: What evidence is there of Saudi students' autonomy in their approach to learning English as a Foreign Language?

The research also aims to investigate the following questions and sub-questions:

1. What language learning strategies do students appear to use during the course and how do these change as the course progresses?
2. Do students work collaboratively and how does this change as the course progresses?
3. What motivation do students have towards learning English and how does this change as the course progresses?
4. What motivation do students have towards using tablet devices for learning, and how does this change as the course progresses?
    a. To what extent do students think this approach supports or limits language learning?
    b. Do students continue to use the tablets to learn after they complete the course?

1.5 Rationale for the Study

The rationale for conducting this study can be attributed to a number of factors, which led me to believe that this study is both necessary and timely. The factors stem from my personal interest, my own experience as a learner in the Saudi educational context, the educational reforms in Saudi higher educational institutions, the international trend towards computerised education that supports the utilisation of mobile devices, and the paucity of mobile language learning research particularly regarding the implementation of tablet devices into a language course. It is hoped that the findings of this study will highlight for educational institutions and EFL teachers the potential of a technology-based language course designed to develop learners' autonomous learning. Instructors who are interested in using tablet devices with their learners will benefit from the findings and discussions related to the issues, challenges, and affordances of integrating tablet-based activities into a language course. It will also add to the wealth of literature on educational technology and mobile

learning in its focus on the iPad as a vehicle for enhancing learning. In addition, the study will add to understanding of the concept of learner autonomy in language learning in the context of mobile learning in second and foreign language learning.

1.5.1 Personal Interest

My motivation to conduct this study stems from my life-long quest to become an autonomous language learner. It is also an attempt to tackle the practical issues I myself encountered as an English learner in Saudi Arabia. Having started learning English at a private school when I was six years old in Kuwait, I continued until the age of fifteen when I moved to Saudi Arabia. There I continued my studies until I graduated as a Bachelor of Arts in English literature. Throughout my studies, I was keen to achieve a high level of English and use it in communication but lacked the opportunities to do so. The question that persisted in my mind was: *'how can I be a good language learner and what is the best way to learn the language effectively?'*. Thus, I began to seek alternative methods outside the classroom to practise my English. I started watching English movies and series on television and listened to songs and programmes on the radio. I had a greater understanding of the general content rather than a detailed understanding of the language, but this helped me considerably in my goal to improve my language. In high school, my interest in using computers was awakened and I started to play games, search the internet, and communicate with others online. I cannot recall the moment at which I was able to use the language fluently, but I am aware of a turning point on my road to learner autonomy: upon moving to England on a scholarship from Imam Abdulrahman Bin Faisal University (Dammam before) to do a Master's degree in TESOL, my interest in the topic certainly became more focused. I found myself deeply engaged in learning sessions in which the theories of teaching and learning a foreign and second language were introduced to me. I was impressed with the range of technology used during such classes, including smartboards, virtual learning environments, and blackboards. However, I was also struck by the contrast with the situation in Saudi Arabia. In England, I was required to be more creative, and depend less on the teachers. Thus, I was involved in many activities, such as debates, seminars, and group presentations, which required me to invest more effort to keep up with my peers, some of whom were native speakers of English. Thus, apart from the guidance from my lecturers and support from peers, self-study was the main source of my knowledge which in fact helped me to cope with the course. Despite the challenges presented, trying to grasp information without a teacher (such as learning to use SPSS software and the different statistical tests) and depending on technology (such as YouTube, research gate, and the Internet) had an undeniably positive impact on my learning strategies.

To complete my degree, I was required to write a dissertation on a topic of my choice and conduct a small project, which was related to my interest at that time in exploring new teaching and learning methods. I carried out research into the impact of implementing a task-based language teaching (TBLT) approach on students' grammar performance. When I returned to Imam Abdulrahman Bin Faisal University to collect my data, during observation sessions, I noticed a lack of interest from most students in the grammar lesson. Once the new teaching approach (TBLT) was introduced, however, students began to engage in discussion, ask questions, and enjoy the lesson. In terms of technology, I noticed that most students were using mobile devices in the classroom, such as mobile phones or iPads. It appeared that some were using their devices to access lectures posted by their teachers and to communicate informally with others. However, they were still relying on their teachers and learning only what they were taught by the teacher with no attempts being made to independently improve their skills or self-direct their learning.

This situation inspired me as I realised that I could combine what I had learned during my own experience of learning and becoming an autonomous learner with what I had learned as a postgraduate. This includes both the fundamental yet theoretical knowledge of language learning theories and language teaching pedagogy as well as the practical skills I developed while using the iPad to create a better language learning course at Imam Abdulrahman Bin Faisal University (IABF hereafter). The observation ignited my interest in the potential use of tablet devices to expand students' English language experience by increasing opportunities to practise the target language outside the classroom. It also developed my interest in research on learner autonomy.

1.6 Significance of the Study

This study is significant as it will provide several contributions to EFL learning and practice. Importantly, it will add to the effort to enhance the quality of English learning in Saudi universities through developing students' capacity for an autonomous approach to language learning. Results of the study will be of interest to instructors and educators concerned with developing autonomy in the language learning process in terms of providing students with the skills required to be able to identify their needs, define their goals, and pursue life-long learning.

This research is also significant in that it provides insights into how mobile devices change the way students learn and think about leaning the target language. It also adds to our understanding of how the integration of tablet devices into a language course influences the traditional student-teacher dynamic. Findings of this research are likely to provide new insights into the use of tablet devices in language learning courses in particular, and courses in other subjects in general. It also has the

potential to inform educational institutions and EFL teachers of the development of a language course that is technology-based to develop learners' autonomous learning. Institutions, which are interested in deployment of mobile learning, could benefit from the discussion related to the challenges and affordances of such an approach. In addition, a unique contribution of the proposed research study to the wealth of literature on educational technology and mobile learning is its focus on the iPad specifically as a vehicle to enhance learning.

1.7 Context of the Study

The context of the study is discussed with reference to the education system in Saudi Arabia, including the teaching of English.

1.7.1 Educational System in Saudi Arabia

The Saudi Arabian Government has emphasised the importance of education since the country's unification in 1932. In 1952, formal education was first provided exclusively to males while females were given access in 1960. The educational system in Saudi Arabia is centralised in that all policies and educational affairs are managed by two government bodies, namely: The Ministry of Education (MOE) and The Ministry of Higher Education (MOHE). While the former is responsible for school education from kindergarten to secondary school and characterised by its uniformity in terms of curriculum across all school levels and arrangements of exams, the latter is responsible for tertiary education in which educational policies, research plans and projects are carried out.

Education in Saudi Arabia, post-kindergarten, is segregated by gender. According to article 155 of the policy of education in Saudi Arabia (1969), despite studying the same materials, male and females must be educated in separate schools, whether public or private, and separate departments in universities. To illustrate, in universities, male instructors teach female students through close circuit screens which requires certain expensive facilities and infrastructures. In terms of target language use, such a system limits students' interaction to one gender i.e. male and female students are unable to communicate or exchange their knowledge. In fact, both genders, in particular female students, are rarely exposed to a situation in which they can use their target language in a real life situation or socialise with native speakers. The segregation of sexes is not exclusive to education but also prohibits the mixing of genders in the workplace as well. In article 160 of the Labour Code (1969), it is stated that male and females are prohibited from co-mingling in the workplace. Such a feature has a close relevance to the current study in which mobile language learning has the potential to effectively promote female and male students' communicative skills by providing a virtual learning

space and fulfil students' need for a wide range of high quality learning resources within the gender segregation code.

Moreover, the education system is comprised of five stages: kindergarten (from 3-6 years old), primary school (6 years), intermediate school (3 years), secondary school (3 years), and university level (typically 4 years). At all stages, education is free for all students to provide equal education opportunities for every student regardless of their financial status. Students at university level are encouraged to continue their studies by receiving financial bursaries.

In addition, the Saudi educational system is considered to be an exam-oriented context in which passing exams from intermediate level throughout university level is the only criterion upon which students can move from one stage to another. As Al-Sadan (2000) points out

> *The regulations and procedures of assessment in Saudi Arabian schools omit any reference to individual or group work. The educational system is geared towards examinations considered to be the crucial gateway to personal advancement. The system has been described as a 'killer of pupils'. Teachers and pupils focus on only one objective: how many pupils will pass? (p.154).*

1.7.2 English Language Pedagogy in Saudi Arabia

In Saudi Arabia, English is taught as a foreign language, which has no official status, as all governmental sectors are dominated by the use of Arabic language. English in Saudi Arabia is not the language of everyday communication but restricted to sectors such as trade, business, travel, medicine, industry and technology, and as a medium of instruction in higher education. Therefore, exposure to English language in everyday life is extremely limited and opportunities to interact using English language outside the classroom are very rare (Abdulrahman, 2009). Such an issue urges the need to develop practical solutions to maximise students' exposure to the target language and positively influence students' learning outcome.

In regard to the educational system, English is introduced to students as a compulsory subject from the fifth grade at the age of 10 in public schools and from reception level in private schools. Recently, however, the Saudi Education Ministry has further empowered public educational institutions to extend English teaching to the third grade. Furthermore, English is the medium of instruction in higher education and is a necessary requirement in order to study subjects such as medicine, applied sciences, nursery, dentistry, engineering and computing. In fact, English is considered a condition upon which acceptance into particular schools is determined, particularly the medical majors.

The teaching of English language reflects the traditional approach in which the main focus is on teaching the discrete grammar structures and vocabulary. Thereby, focus is primarily on skills, such as reading and writing, with less attention given to communication skills, such as listening and speaking. In such a system, students are assessed through rigorous examinations in which promotion from one grade to another, whether in schools or university, is based on the final examination. In terms of English assessment, proof of students' linguistic competence and learning outcome is based on the knowledge of linguistic features rather than on students' ability to communicate. Thus, most of these examinations test the mastery of the two skills of reading comprehension and writing at school level and extended at university level to include skills in grammar, listening and speaking, and vocabulary. Such a system exerts high pressure on both teachers and students, especially during the preparatory year. During this year, all incoming students must pass their English exams; otherwise, they cannot progress to college. Subsequently, the teachers' priority is to prepare students for examinations that assess their work by the end of each semester while the students' main concern is to get high marks to be moved to the next stage. The proficiency-based examination system seems to have an influence on the way students think and lean English.

From the above description of the Educational system, including the teaching of English in Saudi Arabia, it can be seen that English teaching and learning has been given much consideration from the Ministry of Higher Education. However, the challenges that face both teachers and learners including the traditional teaching methods applied in most schools and universities, the exam-oriented context, the overcrowded classrooms, the segregated educational system, and the absence of English use outside classroom all have significant implications for the present study. In such a context where the demand for English is rapidly increasing, but most students are struggling to improve their target language skills due to the teaching quality they experience in Saudi schools and university, this implies that there is a need for initiatives to be implemented to improve the process of language learning and create opportunities to enhance students' learning experience. Thus, the current study investigates whether the proposed mobile learning method could be used to better support Saudi students and create new opportunities regardless of the physical, cultural, and educational barriers they encounter in their context.

1.8 Thesis Structure

This thesis is presented in seven chapters. The introductory chapter sets out the statement of the problem, and establishes the rationale for conducting this study and the main objectives that

prompted the investigation. It also provides an overview of the educational system in Saudi Arabia, including a discussion of English teaching and assessment in the Saudi context.

The second chapter discusses definitions of autonomy, versions of autonomy, and issues in assessing autonomy. In addition, the chapter relates the concept of autonomy to the concept of motivation and CALL (Computer Assisted Language Learning). The review also explores the two skills of listening and speaking and their relevance to the issues raised when preparing this study. Furthermore, the literature relevant to Mobile Learning and Mobile Assisted Language Learning is discussed. Different definitions of mobile learning are presented with a discussion of the difference between mobile learning and eLearning. Following this, the chapter discusses the potential benefits and challenges of a mobile language approach in language learning. The chapter includes a review of research studies on mobile language learning and then establishes the gap in the literature. The chapter also involves a discussion of the theoretical foundation of the study. This begins with sociocultural theory and moves on later to relate the application of the theory to MALL.

Chapter three starts with clarifying the epistemology and ontology underpinning the current study. Moving to a justification of the mixed methods approach adopted for this study. It also presents a description of the research setting, participants, procedures, data collection, data analysis, instruments and materials, together with a discussion of relevant ethical issues and the role of the researcher.

Chapter four and five deal with the results obtained from the quantitative and qualitative data. This includes results from questionnaires and findings obtained from student diaries, focus group interview, think aloud protocol, and online log file data.

Chapter six contains the discussion of the findings in which all the results are triangulated and interpreted. Each section discusses a separate research question and relates it to the main findings and the border literature.

In chapter seven, the researcher concludes her study in which the main findings of the research are restated with the implications for students, teachers, and educational institutions. Limitations of the study and suggestions for future research are also included. The researcher concludes this chapter by stating her personal reflection of this study.

Chapter 2: Literature Review

2.1 Introduction

The aim of this chapter is to position the current study within the relevant literature and to discuss the theoretical framework that this study is centred around. It also aims to pull the different stands from the two main themes relevant to the current study, namely learner autonomy in language learning and Mobile Assisted Language Learning in order to build up the argument for the need to explore how learner autonomy can be encouraged in support of language learning by integrating tablet-based activities into an EFL course. The review has therefore been broken down into two main sections, each dealing with literature from those domains. The chapter opens with an overview of the conception of learner autonomy, different versions and levels of autonomy, and a number of issues that remain under debate. The theoretical foundation that underpins this study is then presented, in particular perspectives on constructivism with a focus on socio-cultural theory (SCT), the Zone of Proximal Development (ZPD), scaffolding, and tool mediation and their relevance to this study. This chapter also includes a brief discussion of technology and language learning, language learner autonomy and its relationship to CALL as found in the literature. Then a second section reviews literature on the current state of mobile learning and Mobile Assisted Language Learning (MALL) and its relation to learner autonomy, motivation, and language learning. The practical benefits and issues in implementing MALL are also considered, and a review of empirical findings from research on MALL then follow. After that, Socio-cultural theory is reconsidered by discussing its central concepts to MALL. Finally, limitations of other studies are discussed which suggest the gap that informs the current study.

2.2 Overview of Autonomy

2.2.1 Definitions and Concepts

The concept of learner autonomy has been defined in a number of different ways. One of the first definitions to be widely accepted was that of Holec (1981, p. 3) who defined it as '*the ability to take charge of one's learning […] this ability is not inborn but must be acquired either by natural means or formal learning*'. This definition provides the basics in understanding the notion of the concept and the main characteristics of autonomous learners. Learner autonomy, according to this view, is not something we are born with, but the capacity to learn how to learn and act in in specific situations. In other words, autonomy can be acquired either by providing learners with opportunities to use their knowledge or, more formally, by classroom instruction and training. Holec went on to further develop his definition by explaining how learners behave. For Holec, the ability to take charge entails

all the decisions related to one's learning which includes the ability to apply different level of metacognitive strategies such as setting objectives, defining progression, selecting appropriate materials, monitoring the procedure of acquisition, and evaluating learning. Holec explained how learners differ in their ability to apply such strategies, which resulted in a variety in their form and degree of autonomy. In this sense, learner autonomy is not a state but a continuum in which each learner experiences a different level along the continuum, stretching from 'complete lack of autonomy' to 'complete autonomy' (Sinclair, 2000). As Little (1990, p.7) puts it, '*autonomy is not a steady state achieved by learners'*. For example, learners can display different levels of autonomous learning despite being in the same classroom, following the same instruction, and using the same materials; and that the same learner can display different levels of autonomy in different situations (Sheerin, 1997). Achieving autonomy, therefore, is an individual path which may vary from one learner to another based on different factors related to learners' context. For example, Sinclair (2000) argues that autonomy can be demonstrated by each individual depending on a wide range of variables, which vary from task to task, and from one situation to another. Variables include both affective and physiological factors, the level of language competence, and experience of tasks or even the task itself. How autonomous learners are, depends on factors including attitude, motivation, the social and educational background of learners.

One of the issues in defining autonomy is the fact that it is a multidimensional concept. According to Benson (2001), identifying autonomy is a difficult task especially when it comes to identifying the behaviours that demonstrate control over learning because autonomy can encompass many other aspects of learning such as learner strategies, motivation, and taking control. According to Murase (2015), autonomy is a multidimensional construct because it can be viewed from four inter-related dimensions: technical, psychological, political and socio-cultural which were further divided into sub-dimensions. Murase (ibid) reconceptualised the concept of autonomy to include many areas like learner strategies, taking control, motivation, controlling affective factors such as anxiety and self-confidence, positive and negative freedom, learners' view of learning with others, and learners' view of learning in different culture (Further discussion of these different areas will follow in the next sections). Accordingly, the multidimensionality as seen in the work of Murase means that a learner's autonomy may be demonstrated differently for different dimensions.

Smith (2003) points out that Holec's definition can be referred to as a common point of reference, providing a broad interpretation and covering different perspectives. This is noticeable in subsequent definitions of learner autonomy. For example, Little (1991) expanded Holec's definition

by emphasising the role of a psychological dimension. He argued that in order to be an autonomous learner, one has to have a positive attitude towards their learning, take responsibility, be willing to interact with others, and have the capacity for reflection. As he states (ibid, p. 4), *'autonomy is a capacity – for detachment, critical reflection, decision –making, and independent action'.*

Little's view of learner autonomy opposed that of Holec's, however, in his emphasis on interdependence over independence. For Little (2007), learning a foreign language is an interactive social process via which learners have to attend to the different situations in which they need to transfer their knowledge beyond the immediate context of the classroom. Thus, he (2001) argued that both social interaction and critical reflection are essential to the development of learner autonomy. In this view, Little (1996) highlighted the importance of a key concept which is fundamental to autonomy that is critical reflection. Critical reflection refers to learners' ability to analyse, reflect, and synthesized information by interacting with other students in order to create new perspectives (Little, ibid). From a social constructivist viewpoint, the development of cognitive processes, including critical reflection during social interaction, encourages learners' capacity to notice and internalize meaning and participate fully and critically (Vygotsky, 1986). According to (Jiménez Raya et al, 2007), when learners think critically, they become able to not only make their own decisions but also base their decisions on rational assessment.

Similarly, Dam et al. (1990) believed in the value of the social aspect of learning, viewing autonomy as a willingness to work individually and in co-operation with others. For Dam et al. (ibid), developing learner autonomy is not an easy task; rather it requires constant collaborative effort on the part of the teacher and students.

In the same vein, Benson (2001) argued that a reason behind the confusion surrounding the notion of learner autonomy is the assumption that autonomy implies working individually and in isolation from the teacher and other learners. However, he explained that autonomous learners are those who socially construct their knowledge by interacting with others. The key concept in this model is the invaluable role of the teacher and the learning process, in which classroom practice needs to reflect the idea of taking control, responsibility, and charge. One way to achieve this goal is to equip learners with the skills necessary to function efficiently outside the classroom and continue learning after formal instruction has finished (Field, 2007).

However, Illés (2012) questioned the suitability and effectiveness of the concept of learner autonomy in English Teaching and Learning, particularly the training-oriented view, in light of the change in

circumstances of the international use of English language nowadays. According to Illés, being autonomous learners would not necessarily lead to successful future language use. Training learners by teaching them certain skills or strategies would help them to cope with pre-defined tasks but not a real life situation, as the latter is difficult to predict. For learners to be able to collaborate with others, they first need to be competent in language use in order to be able to communicate with others in real life situations (ibid). As Illés suggests

learner autonomy can be defined as the capacity to become competent speakers of the target language who are able to exploit the linguistic and other resources at their disposal effectively and creatively (ibid, p. 509).

Illés developed the notion of capacity to include a learner's ability to exploit relevant resources to be used in challenging situations. It can therefore be said that engaging learners in activities that have no pre-established answers forces them to activate their linguistic knowledge and independent thinking. Autonomy in this view is not an end in itself but comes as a rewarding outcome of efficient language use.

Other researchers highlight the importance of self-confidence (Wenden, 1991) and anxiety (Benson, 2001) for learner autonomy. The former refers to learners' awareness of their role in the learning process which include their ability to acquire strategies to self-direct and manage their learning (Wenden, ibid). According to Crick and Wilson (2005), confidence is one of the factors that contributes to learners taking responsibility for their learning. Similarly, Burt (2004), associated self-confidence with the ability to exercise control, which are considered as a requirement for fostering learner's motivation. In other words, to act autonomously, learners should have the confidence to take responsibility for their own choices and make decisions during the learning process. According to Alkhatnai (2011), the increase in self-confidence would have a positive impact on learners' involvement and learning.

Anxiety, on the other hand, relates to '*the feeling of tension and apprehension specifically associated with second language contexts'* (MacIntyre and Gardner, 1994, p.284). Horwitz et al. (1986) described learner anxiety as a distinct process, which is divided into three main components namely, communication apprehension, fear of negative evaluation, and the anxiety associated with exams. For Oxford (1990), moderate anxiety can help in pushing learners to their best performance in language learning while overly anxiety can be harmful to the learning process as it may block language learning. Therefore, Oxford (ibid) proposed several strategies to reduce the level of anxiety, which she associated with learner autonomy (for more information on language strategies please refer to section

2.2.5 Learner Autonomy and Language Learning Strategies). Based on this view, being autonomous learner refers to learners' ability to be confident with their choices and selecting their own path. It also entails the ability to manage their anxiety in different situation and cope with any unexpected ambiguity in the learning process.

Based on the argument of Holec, 1981; Sinclair, 2000; Little, 1990, 1991, 1996, 2001, 2007; Benson, 2001; Murase, 2015; Illés, 2012; and Littlewood, 1996, it appears that the notion of autonomy covers several perspectives that are widely accepted in the literature. Thus, for the purpose of this research, learner autonomy is interpreted as students' willingness and ability to take responsibility for their own learning. This ability is not found in all students in the same degree, but it varies based on many interrelated factors such as the learning goals, context, and the level of language competence. The present study also associates autonomy with the ability to work individually and in collaboration with others. Thus, autonomous learners in the current study are those who have the ability to work in isolation or with other learners and benefit from their social interaction by reflecting on and synthesizing their learning to create new understanding. The study also views autonomy as learners' capacity for critical reflection on all aspects of the learning process. In addition, the present study has taken into account the learners' affective factors including self-confidence and anxiety when defining learner autonomy.

Overall, three main issues are central to our conceptualisation of learner autonomy in language learning and practice. One is related to our understanding of 'taking charge of one's own learning' which entails the notion of control over learning, the second one is concerned with the meaning of independence and interdependence that are closely associated with the concept of autonomy, and the third one is to do with learner training which includes learning to use strategies. The three issues are discussed in the following sections.

2.2.2 Control

An issue that is central to learner autonomy is control, which according to White (1999, p. 452) refers to '*the orientation of an individual towards what determines their success or failure'*. In the view of Glass and Carver (1980), learners who perceive that they have control over their learning are more likely to get a positive outcome as their tendency to make more effort to learn the language is increased. On the contrary, those who lack control are less likely to make an effort to learn the language; hence, the likelihood of achieving a positive outcome is decreased. Thus, control is considered beneficial to individual learners as it is thought to have an impact on the outcome of the action carried out in language learning (ibid). For Benson (2001), exerting control over the learning process is a natural

aspect of second language learning and there is a need for every language learner to be able to exert such a control. In support of this view, motivational theories, such as Self-Determination Theory (SDT, hereafter), are built on the assumption that there is an innate psychological need for control within each individual, which is referred to as autonomy (Deci and Ryan, 1985). Autonomy need, in SDT, is the need for feelings of willingness and choice in regard to learners' activities and goals. Thus, within SDT theory, it is important for learners to initiate their own activities, and operate in contexts that allow free choices and full volition (ibid). In such a context, which is referred to in SDT as an autonomy supportive context, learners are offered more opportunities for self-initiation, decision making, provided with positive feedback, and are free from pressure that leads to an amotivated behaviour (Deci et al., 1994). Accordingly, in an autonomy supportive context, a learner *'enhances intrinsic motivation and […] the internalization and integration of extrinsic motivation because such contexts tend to satisfy rather than thwart the learners' basic psychological needs'* (Vansteenkiste et al., 2006, p. 22). This is in contrast to controlling contexts, which place learners under pressure to think, feel, or behave in particular ways (Deci and Ryan, 2008). For example, in an educational controlled context, the control rests with the teacher who would use externally controlling strategies such as deadlines, rewards and punishments, and overtly controlling language (Vansteenkiste et al., ibid). On the other hand, in a less controlling context, such as in an online learning environment, learners would have a level of control over their learning. For example, in Hobrom's (2004) study in which he investigated the impact of using online materials on college students' autonomous learning, participants in his study reported feeling more empowered when learning in an online environment than when learning in a traditional classroom due to the control they experienced in accessing learning resources at their pace. (For more discussion on SDT theory, please refer to section 2.5 Language Learner Autonomy and Motivation).

The issue of control is more apparent in classroom environments where the power is in the hand of the teacher. For Cotterall (1995), learners who are overwhelmed by teacher-directed methods and view their teacher as an authority figure are less likely to be autonomous learners than those who believe that their teacher is a facilitator that can assist them in their learning process. Therefore, we can argue that the extent to which learners' practice of control inside the classroom is dependent upon the teachers' willingness to release some of their power. Little (1991) asserts that:

for a teacher to commit himself to learner autonomy requires a lot of nerve, not least because it requires him to abandon any lingering notion that he can somehow guarantee the success of his learners by his own effort. Instead, he must dare to trust the learners (p. 45).

Coyle (2000) illustrates how empowering learners to exercise control in language learning requires a 'dramatic shift' in common classroom practice in which teachers are typically the sole authority figures, determining the content, controlling classroom discourse, and setting goals. Thus, for language learners to develop autonomous learning, the teacher's role must be changed from 'purveyor of information' to 'counsellor and manager of learning resources' (Little 1990). Holec (1981) describes the new role of the teacher as 'irreplaceable' and claims that the new definition of teachers is more concerned with the creativity and competence rather than their authority and teaching techniques. In other words, teachers of autonomous language learners need to re-conceptualize their roles and be open to the idea of performing a wider range of functions, such as counsellor, manager, organizer, and material developer rather than restricting themselves to the role of dominator (Gardner and Miller, 1999).

However, the question is whether all learners are in a position to be unconditionally free to control their own learning, or if there are situations that require teachers to legitimately constrain their autonomy?

In practice, it is appropriate for teachers to constrain their students' autonomy in certain situations where learners might feel it necessary to revert to the teacher's control. In short, not every learner is necessarily prepared for the demands of being an autonomous language learner and the increased responsibility autonomy entails. In some situations, learners remain dependent on their teacher to help develop the skills to learn, for the provision of opportunities for practice, and to assess their progress (Simmons, 1996). For example, in Xiaoli's study (2008) which were conducted in three different Chinese universities and involved 27 interviews and a questionnaire survey with 450 college students, he explored the conception of learner autonomy from the perspective of English language learners. The learners in his study held the conception about the importance of the teachers' role in guiding students and setting up learning direction throughout the learning process, which should be maintained all the time during the students' learning process.

In terms of language learning, the selection of classroom tasks and materials should remain under the teacher's control (Illés, 2012). This aspect of the learning process, as Illés (ibid) explained, has a pedagogical nature that is teachers' expertise and knowledge of the educational context and students' needs. Therefore, giving learners the chance to be free and take charge of their own learning must depend on an assessment of its relevance to learners' specific setting (Illés, ibid). The writer of this study believes that the legitimacy of constraints on learner autonomy is a matter of balancing learners' and teachers' control to allow both to maintain a degree of control.

In relation to the notion of control, White (2003) proposes a concept of autonomy based on two dimensions: 'learner independence' in contrast to 'collaborative control'. In her argument, learners can be independent in their learning and at the same time are expected to collaborate with others. Collaboration can be viewed in terms of the interaction that takes place in the classroom, and the negotiation of meaning with others. However, one can argue that collaborating with others and being in control is a challenging task. To address this issue, Benson (1996), suggested two possible situations in which control can be practised in a group: 1) a situation that involves collective decision making in which the individual learner's choice is overruled; 2) the other is that of consensus where both individual and group decisions coincide.

In Tuomela's (2007) view, human beings are social in nature and they are adapted to live in groups. He went on to discuss what he refers to as a collective condition in which he differentiates between the I-mode and the We- mode i.e. the difference between thinking and acting as an individual and thinking and acting as a group member. While an individual has a full control over the task in the I-mode, in the We-mode the control is at the hand of the group, hence, a shared authority is exercised over the task. Thus, the collective condition, as he explained, involves commitment from every member of the group regardless of what each individual is required to do. In order to reach the final goal or complete the joint task, all group members need to have a shared identity and motive. Returning to Benson's (1996) argument, a group of learners can normally share control by acting as a single agent to pursue a single intention or complete a joint task.

The view of collaboration and interdependence is the next key area to discuss.

2.2.3 Collaboration and Interdependence

Little (1990) identified five misconceptions of learner autonomy, one of which is using 'self-instruction' as a synonym for the concept of learner autonomy. According to Little (ibid), autonomy is no longer a matter of individualizing learning via out of class initiatives where learners work without a teacher. Self-instruction can help in achieving some sort of autonomy; however, not all learners can become autonomous when working independently without the assistance of their teacher. The view which postulates autonomy as a 'complete responsibility for one's learning' (Dickinson, 1987, p.11) can be problematic because it does not account for the importance of socialisation and interaction in the learning process.

Thus, the concept of interdependence has been introduced as a major component in promoting autonomous learning. According to this argument, interdependence is '*the ability of learners to work*

together for mutual gain, and to take shared responsibility for their learning' (Palfreyman, 2003, p.4). For Benson (1996), there are two types of autonomy, namely 'personal autonomy' and 'social autonomy'. While the former relates to a learner's individuality in terms of learning style and preference of learning activities, the latter refers to learners' interaction and collaboration. Although it is the learner's decision to navigate between these two types and choose whether to work on their own or with others, learners are still considered autonomous learners.

Oxford (1997) argued for this notion when she focused on the importance of collaborative learning in which learners engage with 'more capable others', either a teacher or other more advanced learners, who can provide assistance and guidance. In the same vein, Holec (1981) proposed that autonomous learning entails an acquired ability that is not innate but collaborative through which learners can work with more able people until they reach the highest end of the autonomous continuum. In this sense, the teacher's main role is to engage learners in activities in order to use the target language not as individuals but as a learning community by interacting and co-operating with others (Little, 2000). Therefore, due to the change from a view of autonomy as independence to one of interdependence, an interest in developing autonomy in the classroom has increased as opposed to a previous concern with autonomy in self-study centres.

The following section demonstrates the role of learning training and the ways in which it relates to the concept of autonomy.

2.2.4 Learner Training

Another term that is related to the concept of learner autonomy is learner training, which was initially promoted by European researchers as a means to encourage learners to be more responsible for their learning (Dickinson, 1992). For Little (1991) and Sinclair (2000b), one of the main aspects in developing learner autonomy is enhancing the learners' capacity for self-directed learning via which they can make informed decisions on how to learn the language. Dickinson (1992) outlines the main objectives of learner training as:

to make everyone a better learner, it aims to make everyone capable of independent learning; and it is essential preparation for those learners who need or wish to become partly or wholly autonomous in their learning (p. 13).

According to the above objectives, autonomy cannot be enhanced by providing learners with conditions to work independently of their teacher. Learners need pre-defined skills and preparation to guide them through the learning process in order to achieve the goal of being autonomous

learners. In this sense, the main aim of learner training is to assist the learners in their journey to become 'good learners'.

However, Benson (1995, p. 2) criticised what he refers to as the *'ideological construction of the learner'*, arguing that the use of learner training implies setting up implicit constraints on patterns of behaviour and activities that learners could use. In doing so, learners would act to live up to certain expectations based on the sort of strategies they have been trained to apply. Benson (ibid) goes on in his argument to suggest that the consequence of learners' failure to fulfil these expectations can have an impact on their performance, as they may have the feeling of being poor language learners.

In the same vein, Sinclair (2006) argues that there is disagreement about using the term learner training among advocates of autonomy in language learning. As a result, as an alternative to the concept of learner training, Sheerin (1997) introduced the term 'learner development' due to the former being '*too narrowly and too functionally focused'* (Sinclair, 2006, p. 22). Sheerin (1997, p. 59) defines learner development as *'cognitive and affective development involving increasing awareness of oneself as a learner and an increasing willingness and ability to manage one's own learning'*.

Wenden (1991), however, argued that learners training is essential condition to promote learners' language skills and help them use strategies effectively. For her, autonomous learners are those who have learned to use independently the strategies they have learned as a result of learner training.

I will turn now to another idea that is closely related to the concept of learner autonomy: language learning strategies.

2.2.5 Learner Autonomy and Language Learning Strategies

This section provides a brief overview of the concept of Language Learning Strategies (LLSs), including different definitions and classification systems.

Definition of Strategies

Since Rubin (1975) introduced the concept of language learning strategies to L2 (Second Language) literature, there has been considerable debate on the appropriate way to define the term. In fact, in LLSs literature, the term strategies remains problematic, despite the many empirical studies which have investigated the topic. As Oxford (1990) states:

there is no complete agreement on exactly what strategies are, how many strategies exist; how they should be defined, demarcated, and categorized; and whether it is – or ever will be – possible to create a real, scientifically validated hierarchy of strategies (p. 17).

Considering its ambiguity, some researchers have used different terms to describe LLSs. For example, they have been referred to as 'a set of operations', and 'techniques or devices' (Rubin, 1975), 'learning processes' (Ellis, 1994), 'intentional or potentially intentional behaviours' (Richards and Schmidt, 1992), and 'procedures' (Faerch and Kasper, 1986).

The earliest definitions were based on the assumption that strategies are explicitly displayed activities performed by learners when carrying out a learning task. For instance, Stern (1983) defined strategies as '*particular forms of observable learning behaviour, more or less consciously employed by the learner*' (p. 405). However, later studies suggest that strategies are not always observable behaviour. Among the most widely accepted definitions of LLSs is the one proposed by O'Malley and Chamot (1990, p.1), who assert that strategies are '*special thoughts or behaviours that individuals use to help them comprehend, learn and/or retain new information*'. According to this definition, strategies are not only behaviours but also thoughts that learners utilize when engaging in a learning task that cannot be always explicitly shown. Supporting this view, Stern (1992) proposed that learners can employ learning strategies consciously or subconsciously when performing a task in order to achieve particular goals. Wenden (1991, p.18) supported this claim when she described strategies as '*mental steps or operations that learners use to learn a new language and regulate their efforts to do so*'. Nonetheless, for some researchers, there is a need to distinguish between strategic and non-strategic behaviour in which any strategies that are associated with unconscious behaviour cannot be considered strategies and must be referred to as processes instead (Cohen et al., 1998). To illustrate, any learning behaviour can be regarded as a learning strategy only when learners are able to describe the reason behind using it. However, once learners reach the stage where they are no longer aware of using certain learning behaviour (strategy), then other terminology has to be used to describe such unconscious learning behaviour, such as 'process' (Cohen, ibid).

A further step was taken by Oxford (1990) who considered the role of emotional factors in learning. For her, learning strategies are

 specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations' (p. 8).

Oxford extended classification scheme of LLSs according to their use by adding the affective strategies category, which learners use to regulate their emotion, attitude, and motivation and to change the nature of learning to be more acceptable and enjoyable.

Classification of Strategies

The foregoing discussion of LLSs has revealed that there is no one accepted definition for the term, which results in diversity in the classifications of LLSs. Different researchers have formulated different typologies of strategies based on certain criteria. For example, direct and indirect (Rubin, 1987, Oxford, 1990), cognitive and metacognitive (O'Malley et al., 1985), and whether strategies are being used individually or via interaction with others (Politzer, 1983).

One of the earliest classifications of strategies was that proposed by Naiman (1978). In his scheme, Naiman provided five broad groups of strategies which he believed were used by successful language learners. The major categories were active task approach, realization of language as a system, realization of language as a means of communication and interaction, management of affective demands, and monitoring of second language performance. However, this scheme has been criticised for lacking any foundation in L2 acquisition theory (O'Malley and Chamot, 1990).

A more comprehensive and detailed taxonomy of LLSs was presented by Oxford (1990) in which she systematically linked individual strategies and strategy categories with the four language skills: reading, writing, listening, and speaking (Jones, 1998). Oxford's framework consists of two main categories of strategy direct and indirect. Where the former refers to strategies that directly involve the target language, the latter is useful in supporting and managing the language learning process without directly involving the target language. Direct strategies are further divided into three sub-groups including memory, cognitive, and compensation strategies. Similarly, indirect strategies are divided into metacognitive, social, and affective strategies.

Although Oxford's (1990) model has been one of the most widely used frameworks, it is criticized for not being clearly related to the learning process. As O'Malley and Chamot (1990) state

*this extended listing is far removed from any underlying cognitive theory, fails to prioritise which strategies are most important to learning, and generates subcategories that appear to overlap (*p. 103).

Oxford's framework is, indeed, sometimes confusing especially when trying to separate different sub-categories of strategies such as cognitive and memory strategies as both tend to overlap (For further discussion please refer to the section on Strategy Inventory for Language Learning (SILL)

With a different focus, O'Malley and Chamot (1990) proposed their three-part strategy model, which is based on cognitive theory and a constructivist approach. The strategies were divided into cognitive, metacognitive, and social/affective. The first consists of strategies for controlling the

language learning process, such as resourcing, grouping, note taking, imagery, and summarizing. The second category is used to manage the learning process, which includes strategies, such as planning, organizing, and self-management. The third is for strategies used to manage emotions and learn with others. Examples of the third type involve strategies like questioning for clarification, and cooperation with others to assist learning (for more details of each category see Appendix 6). The language learning strategies have been explored and investigated on numerous occasions and in different contexts.

In terms of cognitive strategies, Jácome (2012) found out that a self-revising strategy helps learners to identify their mistakes which can contribute in promoting learners' self-correction process. Alharthi (2012) carried out a study in which he investigated the impact of using strategies on the written product of university Saudi learners of English. The findings suggested that the students were conscious of the writing strategies in which they appeared to plan, translate and edit their writing. The study showed that students focused mainly on the translation strategy to achieve different learning goals such as 'checking accuracy of written expressions, generating ideas, or in their attempt to recall suitable words and phrases' (Alharthi, 2012, p. 9). Similar results were found in other research studies in which students were found to translate form Arabic to English to produce correct form of English for their written tasks (El-Aswad, 2002; Alhaysony, 2008). Alzahrani (2015) also reported students' use of their mobile devices to translate words, idioms, phrases and expressions from English to Arabic and vice versa.

Other studies looked at evidence of students' use of other learning strategies such as metacognitive strategies in which high frequency of metacognitive strategies use was found among students (Razak, 2000; Oh, 1992; Mullins, 1992; Torut, 1994; White, 1995; Phillips, 1990; Hauck and Hurd, 2005; White, 1997; Jiménez Raya et al., 2007; Chapelle and Mizuno, 1989). For example, in a study of LLSs by Malaysian students, Razak (2000) found that metacognitive strategies were the most frequently used, and attributed this to students' interaction with the computers as a medium for learning. On the other hand, this result seems to contradict previous studies where learners' metacognitive strategies were found to be used at a low level (O'Malley et al, 1985, Vanijdee, 2001; Hu, 2003). In a study by Almutairi (2008), it was found that learners used metacognitive strategies such as planning and setting goals at a low level. She attributed students' dependence and their inability to develop such strategies to the educational system, and the traditional teaching methods.

Likewise, Almutairi (2008) and Vanijdee (2001) found that learners used social strategies at a very low level (Almutairi, ibid, Vanijdee, 2001). While Vanijdee attributed such findings to the lack of

interaction in the distance learning environment, Almutairi argued that students' low use of social strategies was due to their insecure feeling about their language competence, and their educational experience. In such an educational system, the priority is given to the reproduction of information rather than the use of language in real contexts, which contributes to students' passive involvement in the learning process.

In short, the above section gave broad coverage of LLSs with a consideration of the main issues related to the field namely, definitions and classifications of LLSs. Language Learning Strategies, as shown in the literature, are not always observable behaviour but also thoughts that learners utilize when engaging in a learning task that cannot be always explicitly shown. At the basic level, this thesis conceptualizes LLSs as specific actions carried out by learners in order to improve their learning, which involve both mental and observable actions such as self-regulated activities, social activities, and the procedures undertaken to learn the language.

In addition, different taxonomies are proposed to classify LLSs. Some researchers give a broad typology of strategy group while others make more extensive categories. Both approaches were criticised for either a lack of theoretical foundation or for not clarifying how each strategy groups can contribute to the learning process. Unlike Naiman (1978) and Oxford's (1990) LLSs typology, O'Malley and Chamot's (1990) framework seems to be the most appropriate classification of LLSs for the current study for the following reasons: firstly, the model is based on the theoretical foundation that is the cognitive and constructivist approach. Secondly, the framework considers the interaction between students and teachers, placing emphasis on scaffolding, and on the development of metacognitive and social strategies.

Summing up, the literature shows that there is no single agreed definition for learner autonomy in the field of language learning. This is perhaps because learner autonomy is a complex multidimensional construct that could be viewed from different angles i.e. it includes both notions of individualisation and socialisation. Furthermore, three main concepts that have been shown as key to understanding learner autonomy are control, collaboration and interdependence, and language learning strategies. The current study has been approached from the position of viewing learner autonomy in terms of these three concepts. Therefore, the definition of learner autonomy should entail learner's ability to take charge and develop a sense of responsibility but at the same time working in collaboration with others. It is also important for learners to be mindful of the fact that despite being in charge of their learning, the learning process cannot function without the teacher's knowledge and guidance.

To be discussed now are three perspectives of learner autonomy that have been conceptualised according to different underlying philosophical viewpoints.

2.3 Versions of Autonomy

As is apparent in the previous discussion, autonomy is 'a complex multifaceted concept' (Benson, 1997:29), accordingly the relevant literature on learner autonomy reflects the diversity in researchers' views on how the concept has been interpreted (Benson, 1997, 2004, 2010, 2011; Dickenson, 1995; Littlewood, 1999; Nunan, 1997; Sinclair, 2000; Sheerin, 1989 and 1997; Lamb, 2000; Little, 1991; Breen and Mann, 1997), and more importantly how it has been viewed by teachers and different learning institutions. Benson (1997) classifies different perspectives on autonomy in language learning into three categories 'technical', 'psychological', and 'political'. He associates these three versions with major philosophical approaches to knowledge and learning, namely positivism, constructivism, and critical theory. For Benson (ibid), despite the differences between these three versions, they complement each other and reflect the diversity of this construct. In practice, the autonomous learner can, in fact, encompass all of these versions at once with different emphasis on one or another at different situations and times (Sinclair 2000a; Hsu, 2005; Holliday, 2003). On the other hands, Oxford (2003) built on Benson's categories by adding the sociocultural perspectives to learner autonomy, which is aimed at addressing the issue of learners and their social context, as it is discussed in the next part of this section.

2.3.1 The Technical Version of Autonomy

For Benson (1997), technically autonomous learners are those who take charge of their learning without the intervention of the teacher and can work in an effective way outside the context of the formal language classroom. Benson categorized this version within the framework of positivism, which postulates that knowledge is acquired through '*predetermined structure and forms*' (ibid, p. 23). In this sense, knowledge exists objectively, and learning can be acquired through transmission of knowledge from one individual to another. Likewise, target language can be learnt by equipping learners with skills and techniques through systematic teacher directed training. Such training can help learners in situations where they have to take responsibility of their learning beyond the context of the classroom. Thus, positivism supports the traditional view of teacher-student relationship in which a student's mind is a container, which needs to be filled with teachers' knowledge. In the technical model, the focus is basically on one situation in which learners study entirely by their own and have to make all the decisions related to their learning without any help from the teacher or other instructors such as in self-learning centres. In addition, such a model views learning strategies

as tools that can be given to learners through learner training and can be applied in self-directed learning.

However, some researchers such as McDonough (2002) argued that training learners implies directing them to behave in a certain way, which contradicts the idea of learner autonomy. In other words, when training is presented to direct learners to behave in the same way, this will leave learners without freedom to exercise responsibility, make choices, and manage their own learning in the way they believe it works for them.

Oxford (2003), on the other hand, holds an opposing view when she argues that learners need to take charge of their learning in situations other than self-access centres including classrooms, and travel environments. In her view, the development of a learner's skills (learning strategies) cannot be separated from a teacher's knowledge of learners' needs and context. Learner autonomy, thereby, is neither a matter of solo learning nor a collection of tools (or learning strategies) that can be handed to learners without considering their motives, and learning goals. Rather, to be an autonomous learner, one needs support from teachers, advisors, and educational institutions. Thus, Oxford's (2003) view of technical autonomy points to the importance of teachers' role in empowering learners with the skills and strategies needed to cope with the requirements of such a situation. In addition, she focuses on the physical situation in which she emphasizes the need to support learners to work effectively in any learning environment whether inside or outside classroom. In light of this view, learners need to be trained to monitor their progress, manage their linguistics weaknesses, and use different language resources (Dickinson, 1991; Victori and Lockhart, 1995).

2.3.2 The Psychological Version of Autonomy

The second version views autonomy from a psychological perspective, interpreting autonomy as a *'capacity- a construct of attitudes and abilities- which allows students to take more responsibility for their learning'* (Benson, 1997, p. 19). This view focuses on learners' self-confidence, self-determination, motivation, and their mental and emotional characteristics as a means by which learner autonomy can be promoted. Thus, learners, in this view of autonomy, are driven by their personal ambitions to act independently inside and outside the classroom; and their willingness to be open to the different opportunities available to them (Little, 1991).

The psychological view of autonomy is closely related to a constructivist approach to language learning, which places emphasis on the role of the learners in constructing their knowledge. Unlike the technical/positivist approach, which is concerned with training learners by providing them with

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tools/strategies to function successfully outside the context of their classroom; autonomy from a psychological perspective is a goal and a product of the learning process (Carter, 2006). Accordingly, learners in this version are the creators of knowledge who are able to interact with others, transfer what they have learnt to wider settings, and take responsibility for their learning (Little, 1991).

Oxford (2003) criticized this view of autonomy for its lack of any relevance to the sociocultural context and the role of mediating learning. For her, focusing on individuals' freedom in learning and thinking, and their responsibility for decision-making alone cannot develop learner autonomy.

2.3.3 The Political Version of Autonomy

Besides associating autonomy with freedom from external control, and the internal capacity to develop learning, Benson (1997) links autonomy to the learners' ability to take control over their learning without constraints from external authorities such as educational institutions. Thus, the main issue in this perspective over autonomy is learners' ability to control not only their learning process and content but also the institutional context in which learning takes place. For example, in educational institutions, learners can make their own choices in what and how to learn and deal with the teaching- learning issues that intervene in the learning process. The roots of the political version are linked to critical theory, which places emphasis on the social, cultural, and political context in which the development of autonomy takes place (Pennycook, 1997).

Benson (1996) further elaborates on the notion of 'control' to include three levels: control of the management of language learning, control of language learning resources, and control of the language aspects. The first level refers to a learner's ability to apply metacognitive strategies in terms of planning, organizing, setting goals, and evaluating progress (ibid). Another factor affecting the degree of autonomy is the learner's awareness of the content of their study i.e. what they learn and how they use it as this will affect their ability to make appropriate choices among the learning resources at their disposal (ibid). Finally, he suggests that being a competent language user and having the required academic abilities and skills will enhance their confidence in their ability to acquire new language patterns (ibid).

2.3.4 The Sociocultural Version of Autonomy

Oxford (2003) develops Benson's psychological version of autonomy by incorporating the interactional aspect of knowledge construction, arriving at what she describes as a sociocultural version of autonomy. In her model, the primary focus is on socially mediated learning in which she considers the significance of interaction in developing human capacity and cognitive and language

development (ibid). According to this view, learner autonomy can be promoted via dynamic interaction between learners and more capable others, or the context itself. In addition, through appropriate scaffolding, learners can receive different versions of assistance such as practice, cultural knowledge, and language strategies, which can help in developing their self-regulated abilities and enable them to act independently in socio-cultural contexts (ibid).

In sum, viewing learner autonomy from different perspectives and associating it with philosophical stances can help in maximising our understanding of such a complex concept. From the discussion above, it appears that learner autonomy revolves around different notions that have been discussed in defining the concept of learner autonomy namely, taking control, learner training, and interdependence. Benson's model acknowledges the importance of learning management and in so doing claims that learners need to be equipped with skills needed to cope with different situations outside the scope of the classroom. Benson also addresses the issue of learners' control over external conditions that takes place within the learning context.

However, the writer believes that Oxford's model reflects a more practical image of learner autonomy as it values external contributions of others and emphasises the significance of learners' interaction in the learning process by placing less emphasis on the individualistic. Thus, the definition of autonomous learning should take account of different aspects of learning including control over learning inside and outside classroom, capacity to self-direct learning, negotiation and interaction with others, and preparation for, and training in, how and what to learn.

Having looked at the different versions of learner autonomy, the section below discusses whether autonomy is culturally appropriate or not.

2.4 Autonomy and Culture

As discussed earlier in this chapter, learner autonomy is an individual path, which may vary from one learner to another and even for the same learner in different contexts. Similarly, autonomy can vary from one cultural context to another (Benson, 2001). Therefore, to apply learner autonomy in different cultural contexts, it is essential to consider the different features of the sociocultural and educational environment where autonomy is to be presented (Pennycook, 1997). While some learning contexts accept the idea of learner autonomy that revolves around the concept of taking control, other contexts will question the appropriateness of such an idea. For Tudor (2001), cultural context is one of the factors that have a powerful role in influencing students' learning either directly

by determining what can or cannot be done, or indirectly by influencing students' attitude and behaviour towards their learning.

The issue of whether autonomy is culturally appropriate was first introduced by Riley (1988) who was concerned with the idea that learner autonomy is particularly relevant to the western culture, hence, not compatible with the non-western culture. In support of this claim, Young (1986) argued that autonomy is more related to the values of western culture in its focus on the notions of student-centred learning, independence, and taking control. Such values may not be suitable in contexts where learners are accustomed to the non-western ideology in which challenging teachers' authority may be viewed as a rebellious. Adamson and Sert (2012) shared the same view in which they argued that the adoption of learner autonomy might not be accepted in cultures other than those found in western contexts. A number of studies have been carried out to investigate the appropriateness of autonomy when it is introduced to non-western learners (Press, 1996; Riley, 1988). The results of these studies implied that the non-western learners are unlikely to work autonomously due to the cultural principles that underlie their learning and teaching contexts. On the other hand, other research studies conducted in the field have shown the appropriateness of autonomy as a universal construct that can be applied in different contexts (Hafner and Miller, 2011; Chan, 2000; Ma and Ma, 2012; Snodin, 2013; Figura and Jarvis, 2007; Wang, 2010).

Littlewood (1999) suggested a broader framework of learner autonomy to fit the different needs and cultural values of learners in different contexts. For him, a fixed definition of autonomy may accommodate learners in a specific context, but may not be suitable for others in different cultural settings. Therefore, Littlewood (ibid) opposed the view which relates autonomy, in particular language learning autonomy, to only western culture and introduced the concept of proactive and reactive autonomy.

Littlewood argued that proactive autonomy is more relevant to the concept of autonomy in the West. From this point of view, learners can establish their own learning agenda which affirms their individuality. They can set up their own directions in the learning process by taking ownership of different responsibilities, such as deciding on learning objectives, selecting materials and learning methods, and evaluating progress. On the other hand, in reactive autonomy, learners organise their own resources autonomously, but to achieve goals set by others. In other words, learners regulate the activity once the direction has been set by the teacher. Learners in this type of autonomy are stimulated to learn the language without being pushed. An example is when learners work on a task that is directed by the teacher who outlines the expected outcomes, defines the relevant materials,

and evaluates the outcomes. Thus, according to this view, reactive autonomy implies the use of more collaborative and cooperative learning strategies. Littlewood (ibid, p. 75) recommended using reactive autonomy as '*a preliminary step towards the first or a goal in its own*' especially when it comes to education. For other researchers, autonomous learners can develop a level of both proactive and reactive autonomy based on their needs and goals in a certain learning situation.

The proposition of Littlewood (1999) implies that the practice of autonomy in non-western contexts, including the one in which the present study has been conducted, can be justified as a culturally appropriate when the features of the cultural context, the psychology of the students, and the values of the society are considered. Where autonomy can be facilitated in one context, it can be rejected in another based on different factors that can influence learners' independence. For example, in the context of Saudi Arabia, two different studies have been carried out to investigate the current practice of learner autonomy among Saudi students. Al Zubi et al. (2017) conducted a study at Najran University to explore students' autonomous language learning in EFL context. Quantitative data was collected from 208 undergraduate students. Findings of the study indicate that students experienced a low level of learner autonomy in three main areas: taking control, metacognition, and self-reliance. The study attributed such results to the teacher-centred classrooms. They concluded by arguing the need for a pedagogy that focuses on learner autonomy as a way to improve learning. Similar results were shared by Alrabai (2017) who was interested in investigating Saudi students' level of autonomy when learning English as a foreign language. Alrabai (ibid) found that students in her study were not autonomous and concluded by highlighting the importance of a greater awareness of the concept of learner autonomy for both the teachers and the students. On the other hand, other studies carried out in the Saudi contexts indicate the suitability of learner autonomy in the Saudi context and revealed promising results when such a concept were introduced (Al Ghazali, 2011).

The implications of these studies are linked to the previous argument that a variety of factors should be taken into account when deciding what type of autonomy is likely to be most appropriate for learners in a particular context.

Having looked at the autonomy and its relation to cultural context, the next section will explore the interrelatedness between learner autonomy and motivation.

2.5 Language Learner Autonomy and Motivation
Motivation is widely considered an important factor in determining human behaviour, which accordingly can affect a language learner's proficiency level (Dörnyei, 1994). Such a factor can be

reflected in '*goals and directions pursued, levels of effort invested, depth of engagement, and degree of persistence in learning*' (Ushioda, 2014). When students are motivated, they can achieve their goals in language learning regardless of their intelligence or skills (Nakata, 2006; Thornbury, 2006; Masgoret and Gardner, 2003; Dörnyei, 2001b). Alexander et al. (1994) elaborate on the importance of motivation by arguing that learning develops in students who display an interest in learning goals, and those who perceive themselves as successful learners. According to Guay et al. (2008), parents and teachers view motivation as an indicator of students' success at school because without sufficient motivation, even the brightest learners are not expected to attain successful learning outcomes (Dörnyei, 2001b).

One of the pioneers in the field of second language motivation is Gardner (1985) who introduced the Socio-Educational Model of motivation, which focuses on four interrelated components involved in second language acquisition: the socio-cultural milieu of learning, individual difference variables, the contexts for language acquisition, and the outcomes.

The first component is the socio-cultural milieu, which refers to the individual's cultural beliefs that play an important role in second language acquisition. The cultural beliefs developed in a particular social milieu would be expected to have an influence on the roles played by the other individual differences including intelligence, aptitude, motivation, and anxiety (Gardner, 1985). In other words, the influence of the four variables would be less in a social context where high level of achievement is expected, than when the beliefs within the social context is that only talented learners would achieve a high level of achievement.

The second component in the socio- Educational Model refers to the four individual differences of intelligence, aptitude, motivation, and anxiety, which are claimed to have a direct impact on language achievement (Gardner, 1985). For Gardner, each of these four differences plays an important role in the language learning process. Intelligence can influence learners' understanding of the nature of the task and help in determining how well learners can absorb the explanations provided. Aptitude, as defined by Gardner (1985), is a number of cognitive abilities that '*play a role in language learning in that individuals with high levels ability would be able to generalize these abilities to the new language*' (Gardner, 1985, p. 147). Motivation is considered to be the primary difference, which has great influence on individuals' success in learning a second language. The last difference is situation anxiety that has an impact on language learning as it affects individuals' performance.

The third component within the Socio-Educational Model is the context of language acquisition, which is categorised by Gardner (1985) into formal and informal contexts. While the formal refers to

the situation where learners receive formal instructions, training, and explanations such as learning in classrooms, informal contexts entail the exposure to second language without formal instruction such as watching movies and listening to the radio. According to Gardner (ibid), the difference between the two situation relates to the role of the four individual differences i.e. intelligence, aptitude, motivation, and anxiety in acquiring the language. To illustrate, in formal situations, the four variables will influence the learning process whereas in informal contexts, only motivation and anxiety will matter.

The fourth variable, as Gardner explained, is the outcome, which will differ according to learners' experience in both contexts. Gardner identifies two outcomes namely, linguistic and non-linguistic. The former related to second language proficiency, vocabulary, grammar, and pronunciation while the latter refers to attitudes, values

Another important point in Gardner's model is the distinction between two motivational orientations (reasons for language learning): integrative and instrumental. The integrative orientation is related to learners' interest in familiarising themselves with the community and the culture of the native speakers of the target language. Thus, the motive behind learning the target language is associated with an intention to integrate with other cultures and societies. Such an orientation is contrasted with the instrumental motivation, which, according to Gardner (ibid), occurs when learners have more functional reasons for learning the target language such as passing exams and getting job opportunities. In this case, the target language is considered as a tool or instrument that enables learners to achieve their practical goals.

To have an impact on learners' behaviour, the integrative orientation must be associated with different variables to learn the language. Within this formulation, Gardner (1985, p.10) defines motivation as '*a combination of effort plus desire to achieve the goal of learning the language plus favourable attitudes towards learning the language*'. More specifically, in order to identify integrative motivation in language learning, four aspects should be considered: an individual's goal to learn the language, degree of effort to reach the goal, a desire to attain the goal of language learning, and attitude towards learning the language. The first component refers to the reasons for learning the language. From a socio-educational point of view, learners are expected to succeed in language learning when they are driven by their own will and strong interpersonal reasons such as associating themselves with another target language community (Gardner and Lambert, 1972). By doing so, they can identify aspects of behaviour such as specific styles of speech or language which can help them in developing their language learning (ibid).

The second component of motivation according to this model is motivational intensity, which refers to students' degree of effort, and the amount of work expended in acquiring the language (Gardner, 1985). Such an effort differs from one learner to another based on the strength of desire each learner has towards language learning. Thus, focusing only on the amount of effort learners expend to learn the target language would not give a complete representation of motivation. Two other factors must be considered in order to describe the concept of motivated behaviour namely, desire and attitude. The former relates to learners' need to learn the language whereas the latter refers to learners' perspectives on language learning. According to Gardner (ibid), individual differences in desire are highly correlated with individual differences in the motivational intensity to learn the language and the attitude towards it.

However, despite its influence in the area of language learning motivation research, this socio-educational model has been criticized for Gardner's interpretation of the concept of integrative motivation. McDonough (1981) argues that integrative motivation may not be relevant to many language learners and criticised the lack of a clear distinction between integrative and instrumental orientations in Gardner's dichotomy of motivation. Like McDonough, Dörnyei (1994) believes that Gardner's model has some limitations. Dörnyei (ibid) claims that in the socio educational model in particular the integrative orientation is more evident in a second language setting where learners are expected to have frequent interaction with the target language speakers. On the other hand, learners in EFL learning settings are less likely to interact with native speakers, and so are unlikely to integrate with that community due to the limited target language exposure in such a setting. Therefore, one of the main problems with Gardner's model is to do with the interpretation of the integrative motivation when it is applied in parts of the world where the target language is learned as a foreign language. In such a context, the integrative motivation plays only a minor role because learners would consider the target language as an international language that is not relevant to a particular community or culture, hence, the intention of community integration would not be applicable (Graddol, 2007; Dörnyei and Al-Hoorie, 2017).

Several research studies were carried out to investigate the existence of integrative motivation among different language learner groups particularly in EFL settings (Clement and Kruidnier, 1983; McClelland, 2000; Warden and Lin, 2000). Results did not support Gardner's interpretation of the integrative motivation construct, and showed the absence of an integrative motivational group in EFL settings. As Clement and Kruidnier (1983, p.72) states '*the integrative orientation appeared only in multicultural contexts among members of a clearly dominant group*'. In addition, Gardner's dichotomy of

integrative and instrumental motivation was challenged for not including all the orientations learners might have to learn L2 in different contexts (Dörnyei, 1994). Empirical results revealed different orientations that were not considered in Gardner's model which included travelling, friendship, and using L2 in challenging situations (Clement and Kruidnier, 1983; Dörnyei, ibid).

Moreover, Dörnyei (1994) claims that Gardner's motivation model lacks sufficient details about the cognitive aspects of language motivation. He (ibid) questioned the need for a more education-centric approach to motivation, a theory that can offer an educational dimension for the foreign language classroom due to the fact that Gardner's model does not include all possible aspects of motivational factors of language learning.

The limitations identified within the Socio-Educational model resulted in a cognitive revolution in the psychological research (Dörnyei, 2003a). Consequently, a number of influential cognitive motivation theories have emerged which are concerned with aspects of motivation as reflected in learners' behaviour. One of these is the Self Determination Theory (SDT) that has been proposed by Deci and Ryan (1985). The main concern in the SDT theory is to identify the conditions that elicit learners' motivation (Ryan and Deci, 2000b). To understand the reasons stand behind learners' motivational behaviour,

'*we need to go beyond a focus on motivational quantity (i.e., high levels of motivation) and take into consideration the quality of motivation (i.e., the presence or absence of self-determined forms of motivation, such as intrinsic motivation*' (Vallerand et al., 2008, p.259).

Thus, the main question in SDT theory is whether learners are intrinsically motivated due to their interest or extrinsically motivated due to external reasons. Accordingly, Deci and Ryan (2000) divided L2 motivation into three categories namely, intrinsic, extrinsic, and amotivation based on the different reasons or goals for learners' behaviour. Intrinsic motivation refers to the learning process that is associated with satisfaction, pleasure, and enjoyment whereas extrinsic motivation refers to external factors, which influence learning such as parental pressure, rewards and punishment, and academic expectations. Amotivation, on the other hand, is related to the lack of an intention (Deci and Ryan, 2000). Amotivated learners are characterised as being completely passive and have no intention to work. Such a behaviour is attributed to three different reasons: a lack of competence, inability to achieve the desired outcome of a task, and not valuing an activity (Ryan, 1995).

Intrinsic motivation has been divided into three subtypes: Intrinsic- Knowledge, Intrinsic-Accomplishment, and Intrinsic-Stimulation (Noel et al., 2000). Intrinsic- Knowledge refers to

learners' feeling of pleasure and satisfaction, which result from involvement in an activity for the sake of acquiring new knowledge and learning new things (Noel, 2001). Learners with this orientation are driven by their own curiosity to explore and develop their learning rather than external pressure or course requirements. Intrinsic-Accomplishment, on the other hand, is related to learners' enjoyable feeling of achievement that is associated with their ability to master a difficult task or complete a challenging activity (ibid). For example, learners might engage in a demanding language activity to gain satisfaction because they feel more competent. The last type is Intrinsic-Stimulation, which is referred to '*the simple enjoyment of the aesthetics of the experience*' (Noel, 2001, p. 45). Learners with such an orientation might engage in an activity for the sake of fun and excitement.

In education, intrinsic motivation is believed to be more powerful and leads to more effective learning because it can '*occur independently of any forms of reinforcement or reward.*' (Hidi, 2000, p.315). This type of motivation has been associated with high performance, achievement, persistence, and high quality learning (Ehrman, 1996; Ramage, 1990; Ryan and Deci, 2000a). However, not all learners can be intrinsically motivated, so,

 because many of the tasks that educators want their students to perform are not inherently interesting or enjoyable, knowing how to promote more active and volitional (versus passive and controlling) forms of extrinsic motivation becomes an essential strategy for successful teaching' (Ryan and Deci, 2000a, p.55).

Thus, in some situations when the learning task is not inherently interesting or enjoyable, learners are more likely to be extrinsically motivated (Ryan and Deci, 2000a). For Ciampa (2014), both intrinsic and extrinsic motivations are crucial in determining learner behaviour and developing learners who are self-directed and self-motivated. In fact, extrinsic motivation plays an important role in enhancing learners' cooperation and competing behaviour, which is found to be effective in a learning environment (Malone and Lepper, 1987).

Extrinsic motivation, as proposed by Deci and Ryan (1985), is divided into four different types: external regulation, identified regulation, introjected regulation, and integrated regulation; which differ according to their degrees of internalisation and assimilation into one's self concept. The process of internalisation and integration, within an SDT framework, refer to '*people's "taking in" a value or regulation, and integration refers to the further transformation of that regulation into their own so that, subsequently, it will emanate from their sense of self.*'(Ryan and Deci, 2000b, p.71). To illustrate, internalisation is an important motivated process that occurs when students are involved in an uninteresting task. To help students accept such a task without posing any pressure on them,

teachers would offer some external rewards. In such a situation, students would start to value the uninteresting activities and internalise them into their behaviour. In other words, students would go through a shift of their orientation from an external regulatory mode to an intrinsically regulated mode.

Such a process, as Deci and Ryan (1985) argue, is not a developmental continuum, rather it may occur in stages. Thus, learners would not go through each stage of internalisation with respect to each type of regulation in sequence. Rather, learners can internalise a new regulation at any point along the continuum based on their prior knowledge and situational factors (Ryan, 1995).

The most controlled form of extrinsic regulation is what Ryan and Deci (2000b) referred to as external regulation. Externally motivated behaviours are performed as a reaction to externally imposed rewards or praises or to avoid threats of punishments. Externally regulated learners are characterised as being less autonomous and perceive their behaviour to be controlled (Ryan and Deci, 2000b). For example, Noel (2001) describes externally regulated students as those who learn L2 in order to fulfil a course requirement or because of their fear of losing a job opportunity.

A less controlled type of extrinsic motivation is the introjected regulation, which refers to a behaviour driven by an internal feeling of pressure to avoid guilt, anxiety, embarrassment or to obtain self-enhancements, appraisal and pride (Ryan and Deci, 2000b). Despite the similarities between integrated regulation and intrinsic motivation as both entail activities that are more internal to learners and both are not controlled, integrated regulation should be regarded as extrinsic motivation because learners perform activities for external rather than inherent pleasure.

A more self-determined type of extrinsic motivation is the identified regulation in which learners identified the personal value of an action and accept its regulation as their own (Ryan and Deci, 2000b). In other words, a learner is motivated through identification of a behaviour that is aligned with his/her personal goals and values. In such a type of extrinsic motivation, learners would experience a major transformation from external regulation into self-regulation, as the main aim of the act would be related to one's self. Although identified regulation is considered to be the most self-determined type of extrinsic motivation, it still entails a form of internalization of regulation since some forms of identification are not related to one's personal values or beliefs (Ryan and Deci, 2002). For instance, students would make more effort to improve their writing skill by practising spelling because they identified the value of such a task to their L2 competence not because they are enjoying it.

The last type, which is described by Ryan and Deci (2000b), as the most autonomous form of extrinsic motivation is the integrated regulation. This form occurs when learners' identified regulations are fully assimilated to the self (ibid). The more learners realise the reasons for an activity to be internalised, the more the extrinsically motivated behaviour transforms into self-determined.

Understanding the four types of extrinsic motivation and what enhances them is crucial for educators who cannot always rely on intrinsic motivation as a means to foster language learning (La Guardia and Patrick, 2008). Thus, one of the main concerns in SDT is how to promote the conditions for learners' internalisation process. Deci and Ryan (2011, p. 19) proposed three innate psychological needs that all human have: relatedness, competence, and autonomy, which they defined as '*essential nutriments for healthy development and psychological well-being and asserting that they are universal*'. These needs have a number of functions: firstly, they offer learners the guidance and directions needed to engage in activities. Secondly, they work as an indicator of learners' potential development and wellbeing. Thirdly, identifying the functions of these three needs will help 'interventionists' to determine '*what aspects of a social context will significantly enhance versus undermine individuals' engagement and effectiveness within the context*' (Deci and Ryan, 2011, p. 19).

Therefore, these needs are crucial to any learner who wants to develop and function optimally regardless of his/her gender, race, culture or socioeconomic status (Deci and Ryan, 2011). In addition, satisfaction of such needs is necessary to enhance more self-determined and motivated behaviour, psychological growth, and well-being. Indeed, motivation is seen to generate from these three innate psychological needs, which have an effect on learners' behaviour and actions. However, failure to satisfy these needs will result in a feeling of pressure and control on the part of the learners which might cause them to avoid or resist performing the task at hand.

The first need is the sense of relatedness. Since extrinsically motivated behaviours are not inherently interesting, learners tend to perform an activity when they feel connected to others or valued by other individuals and communities (Ryan and Deci, 2000b). What facilitates the process of internalization is learners' sense of belongingness and connectedness to peers, teachers, parents, and culture which means that learners need to function in relation to the social world. For example, students' rapport with other learners would result in promoting their involvement and reducing their anxiety (Clément et al 1994). According to the result of studies carried out within the SDT framework, learners' sense of relatedness, which contributes to self-determined motivation, is enhanced in a setting where collaborative learning and social interaction is encouraged (Standgate et

al., 2005; Ryan and Deci, 2000b). In fact, learners are more willing to adopt their actions to satisfy other social groups with whom they feel efficacious and respected (Ryan and Deci, ibid).

The second need is competence, which is defined as '*the accumulated result of one's interconnections with the environment, of one's exploration, learning, and adaptation'* (Deci and Ryan, 1985, p. 27). According to the SDT theory, competence need plays a fundamental role in facilitating learners' internalisation process (Ryan and Deci, 2000a.). In satisfying such a need, learners would feel more confident to perform challenging activities, and more effective in their actions (Ryan and Deci, 2002). For example, when students feel confident in their skills and capabilities, they are more likely to internalise a goal, hence, increase their intrinsic motivation which will result in enhancing skill development and promote a sense of achievement. In fact, learners' perception of their academic achievement can influence their motivation in the classroom (Masgoret and Gardner, 2003). According to Houde (2006), these feelings or opinions become the emotional barriers that are closely linked to students' low expectation of themselves. As a result, students start to believe that they are not able to learn the target language due to its difficulty or because they are not good at it (ibid). The notion of competence is in line with White's (1959) view of 'effectance motivation' in which he argues that all humans have an innate desire for skills perfection to satisfy their sense of competence and mastery. To support the need of competence, Deci and Ryan (2000) suggest providing learners with challenging activities, instructional support, and relevant feedback.

The third need is autonomy, which is regarded as a critical factor in facilitating the internalisation and the integration of the regulations (Deci and Ryan, 2000b). In fact, satisfying the need for autonomy is an important condition to support the other two needs of competence and relatedness (ibid). For learners to experience a sense of autonomy, they need to be offered opportunities of freedom, choice and decision making when involve in a task. As Deci and Ryan (1985) state,

> *Intrinsic motivation will be operative when action is experienced as autonomous, and it is unlikely to function under conditions where controls or reinforcements are the experienced cause of action* (p.29)

This suggests that controlling contexts may yield external regulation or introjected regulation if learners feel competent and connected, but not integrated regulation (Niemiec and Ryan, 2009). In other words, learners are expected to internalise a regulation and thus operate their intrinsic motivation only in a setting that facilitates independence learning.

According to Dickinson (1995, p.168), intrinsic motivation is closely associated with the concept of learner autonomy as both constructs entail a measure of self-determination and both can be

increased in '*students who take responsibility for their learning'*. Ushioda (1996, p. 2) asserts the link between learner autonomy and motivation when she states '*autonomous language learners are by definition motivated learners'*. Based on this argument, motivation can be increased when students are involved in active independent learning, which in turn leads to more effective learning.

However, the relationship between autonomy and motivation is not always linear but rather cyclical. Spratt et al. (2002) in their study on students' readiness for learner autonomy in language learning, carried out in Hong Kong, looked at the relationship between autonomy and motivation. Their results revealed that this relation is more complex and that in many cases motivation is the key factor that affects students' readiness to learn autonomously. Thus, Spratt and his colleagues concluded that motivation is a precondition for autonomy. To illustrate, in order to succeed in language learning and achieve better progress, teachers have to ensure sufficient motivation before encouraging students to learn autonomously.

In addition to such variation in learners' motivational approach to learning, Stockwell (2013) suggests a conceptual distinction between two types of motivation in regard to using technology: the first kind refers to discovering the beneficial features of technology for language learning due to an inherent interest in the technology itself which in turn results in increasing language learning motivation. The second kind stems from a student's strong motivation to learn the language, which leads to trying particular technology in order to support their learning and enhance their experience. In short, learners can have different orientations towards technology when learning a language but regardless of their purposes, learners will display a degree of motivation when it comes to using technology. For example, Warschauer's (1996) study revealed that computer-assisted language learning can increase learners' motivation to learn and communicate with others. The discussion mentioned in this section indicates that autonomous learning and motivation are basic ingredients for a successful language learning experience.

Since the current study introduced the use of the iPad device into a language course with elements designed to encourage students' autonomous learning: facilitating students' collaborative learning, and providing opportunities of control, the SDT theory becomes relevant for the study. Firstly, the theory focuses on the concept of internalisation and categorises motivation types according to the reasons or goals for learners' behaviour. This would provide insights into how students in the current study could display different type of motivation when the iPad device was introduced into their learning. Secondly, the theory provides an interpretation of the psychological needs required to enhance learners' motivation. This is likely be helpful in identifying whether using tablets for

language learning leads to a change in students' actions in relation to their need for relatedness, competence, and autonomy. Thirdly, the SDT theory provides insights into how social forces and interpersonal environment can influence learners' motivation. This is relevant to the assumption that the affordances of tablet devices have the potential to enhance collaborative learning and maximise students' social interaction. Finally, the SDT theory is built on the assumption that effective learning can be achieved through involving learners in an autonomy-supporting environment, In order to enhance motivation.

To summarise, there is a general belief that motivation is closely related to success in language learning. There is also an argument that there is interrelatedness between autonomy and motivation though the relationship is not necessarily unidirectional. While learners' motivation can be attributed to their active involvement and independent learning, in other conditions, motivation can precede autonomy.

Two theories of motivation have been reviewed: the Socio Educational Model and the Self Determination Theory. The former refers to Gardner's (1985) model in which he concentrated on individual variables, social milieu, individual differences, the context and outcomes. In this model, for learners to be motivated, four components have to be taken into account: a goal, desire to achieve the goal, positive attitudes and effort. The latter, on the other hand, classifies motivation into three categories namely, intrinsic, extrinsic, and amotivation. Extrinsic motivation is further divided into four types of regulation including: external regulation, introjected regulation, regulation through identification, and integrated regulation. In addition, the section discussed the psychological needs, which is believed to maximize students' motivation and promote the internalization of regulation.

Having explored the notion of motivation, the chapter continues to answer the question of whether autonomy can be assessed or not.

2.6 Assessing Autonomy

2.6.1 The Difficulties in Assessing Learner Autonomy

A systematic measure of learner autonomy is needed to validate the effectiveness of the different interventions used to enhance learners' autonomy, hence, providing evidence of educational advantages. As Benson (2001, p. 54) states '*If we aim to help learners to become more autonomous, we should at least have some way of judging whether we have been successful or not*'. However, such a procedure has proved to be problematic due to the multidimensional nature of this construct. Several issues are raised in the literature, which explain the lack of a measure or scale. As Nunan (1997) argues,

autonomy is not an 'all-or-nothing concept' that can fit all learners but a matter of degree. Developing learner autonomy depends on several factors such as the purposes behind studying a second language, the cultural context, and the philosophical orientation of an institution.   For example, learners can display a level of autonomy in some situations but not in others. According to Little (1991, p. 4) the level of learners' autonomy can '*take numerous different forms, depending on their age, how far they have progressed with their learning, what they perceive their immediate learning needs to be, and so on*'.

Benson (2001) also explains that one of the initial problems in measuring autonomy is the lack of information about the different phases learners go through to develop their autonomy. Similarly, Sinclair (2001, p. 8) implies that autonomy is variable and uneven when she describes the idea of a continuum from complete lack of autonomy at one end to complete autonomy at the other end (See section 2.2.1).

Another issue identified by researchers when trying to measure learner autonomy is the difficulties entailed in determining what we can consider autonomous behaviour. For Sinclair (1999), autonomy is not a single behaviour but a combination of observable and non-observable characteristics that can be manifested in different ways. Further to this, Benson (2010) also points out that assessing learner autonomy based on behaviour presents serious problems because what we considered an autonomous behaviour is not necessarily a reflection of learner autonomy but a component of it. On the other hand, some non-observable component of learner autonomy can be very important to ignore, which may lead to another problem, i.e. whether autonomy can be measured without including such a vital component.

In relation to this point, Breen and Mann (1997) discuss a further problem associated with observable behaviour in terms of autonomy which they refer to as the 'mask of autonomous behaviour'. In some learning contexts, learners may manifest autonomous behaviour in order to please their teacher, but this is not necessarily an indication of a deep sense of autonomy. However, Benson (2011) argues that such a problem was overstated because pleasing the teacher by displaying autonomous behaviour is not a sign of a lack of autonomy. In fact, as Benson (ibid) claims, the adoption of autonomous behaviour can be an indication of an underlying capacity for autonomy. The issue, then, is more to do with the distinction between autonomous behaviour and autonomy as a capacity. As Benson explained, the former can be a result of a decision-making process as a response to a learning task provided by the teacher, whereas the latter refers to self-initiated behaviour that is displayed either explicitly or implicitly. Thus, to measure autonomy

we will somehow have to capture both the meaning of behaviours and their authenticity as behaviours deriving from a capacity for autonomy. And presumably, students would be especially inclined to wear the 'mask of autonomous behaviour' in situations where they were actually tested on their autonomy (Benson, 2011, p. 85).

Based on this argument, it is important not to rely on autonomous behaviour as a measure of autonomy because it cannot be demonstrated by all learners to the same degree. In other words, despite learners' possession of autonomy, they may not display this in ways that allow its measurement through observation (Sinclair, 1999). For that reason, Sinclair (ibid, p. 100) suggests assessing learner autonomy by considering metacognition awareness or '*capacity or ability to make informed decisions about one's learning'*. Capacity, as Sinclair believes, refers to learners' awareness of the learning processes which includes three areas, namely the learner, the subject matter, and the process of learning. In order for researchers to measure learners' metacognitive awareness, and hence, measure their autonomy, Sinclair proposed a set of criteria to be used as a framework for assessing metacognitive awareness by asking whether learners can do the following:

- Provide a rationale for his/her choice of learning activities and materials
- Describe the strategies he/she used
- Provide an evaluation of the strategies used
- Identify his/her strengths and weaknesses
- Describe his/her plans for learning
- Describe alternative strategies that he/she could have used (Sinclair, ibid, p. 103)

Following these criteria, teachers and researchers can classify their learners as largely unaware, becoming aware, or largely aware (ibid).

This approach, however, suffers from some shortcomings. Firstly, it is confined to a metacognitive perspective of autonomy, which cannot be applied to other areas which relate to the concept of autonomy, such as learners' beliefs about learning, motivation, and language skills. Secondly, self-reported data is limited and sometimes yields minimal response. Thirdly, with this method, the generalisability of results can become an issue of concern because the criteria used are not detailed enough to establish a reliability between different teachers' judgement.

Another framework is proposed by Lai (2001), in which she designed two rating scales to assess learner autonomy. From a metacognitive point of view, she divided autonomy into two areas: process control at micro level, and self-direction at macro level of the learning process. While the first scale investigates the extent to which learners increase their control in terms of self-monitoring and self-evaluating, the second scale is designed to evaluate learners' self-direction, self-organisation,

and self-management skills. Both approaches can be used together to assess learners' gain in developing their autonomous learning.

In addition to these two approaches, which focus on the metacognitive component of learner autonomy, there are other attempts to evaluate this construct and relates it to learner strategies. Demonstrating learner strategies is considered an indicator of increased autonomous learning (Simmons, 1996). However, emphasis on strategy use as the only way to assess autonomy has its limitations as it neglects other significant indicators of this concept, such as motivational factors, psychological factors, and environmental factors (Sinclair, 2000b).

To sum up, this section has discussed a number of issues raised in the literature in terms of assessing learner autonomy. Certain difficulties with assessing autonomy are related to key areas that need to be considered before trying any method of testing namely, variables within autonomy, autonomy as demonstrated behaviours, and autonomy as a capacity. Throughout the literature, there have been calls for a different approach to measure autonomy such as focusing on learners' metacognitive awareness as an indication to assess learner autonomy. However, the writer believes that a major limitation of using an established framework to measure learner autonomy is that using such a predefined model, where data have to be fitted into fixed categories, would not allow for the flexibility that would be needed when researching autonomy in learning contexts for which any particular framework was not designed.

Some of the key concepts of learner autonomy discussed earlier in this chapter share a similar basic set of principles with the theory of sociocultural advocated by Vygotsky (1978). Thus, in the next section, the key sociocultural concepts of the ZPD, scaffolding, and tool mediation are discussed to help in understanding learner autonomy.

2.7 Theoretical Foundation: Sociocultural Theory (SCT)

One of the most influential approaches to understanding second/foreign language learning is the sociocultural theory, which was originated by Vygotsky (1896-1934). Unlike other cognitive theories, the sociocultural theory centralised the fact that knowledge is not entirely a creation of individuals that '*originates and develops exclusively inside the individual mind by means of biological mechanisms and internal process*' (Gutierrez, 2006, p. 232). According to Vygotsky (1978), learning occurs through integration in a community of practice where language, interaction, and social influence are essential in the development of knowledge and understanding. This indicates that social context and culture play a

central role in the development of mental processes. Van de Veer (2007, p. 21) suggests that '*in order to understand the inner mental processes of human beings, we must look at human beings in their sociocultural context*'.

A further characteristic of Vygotskian principles is the concept of higher mental capacity, which distinguishes humans from other lower species. For Vygotsky, mental processes are divided into lower mental functions and higher mental functions. While the former refers to the innate capacities that are shared by both higher animals and humans such as sensations, reactive attention, spontaneous memory, and sensorimotor intelligence; the latter relates to the unique cognitive processes that can be acquired through teaching and learning such as mediated perception, focused attention, deliberate memory, and logical thinking (Leon, 1996). According to Schunk (2012), such special capacities allow humans to manipulate the environment for their own purposes. In other words, higher mental functions, in Vygotsky's view, are built upon lower mental functions and are embedded in the context of the sociocultural milieu; and thus, only humans can react indirectly to the world by relying on mediating tools. Such tools whether symbolic or physical, allow them to change the circumstances of the world they live in and the nature of their relationships with others. Generally speaking, mediating tools include symbolic cultural tools that are created by humans over time, such as language, music, and numbers (Lantolf, 2000); and physical tools that are used to mediate interactions between humans and their environment (Warschauer, 2005).

From this perspective, human social and mental activities are organised and shaped through culturally constructed artefacts. Each culture has its own artefacts which change as time passes in order to meet the need of its individuals and communities. Accordingly, one of the main aims of sociocultural theory is to illustrate how human knowledge and understanding are created through interaction with others and through the deployment of different tools. Therefore, this study adopts sociocultural theory as its theoretical foundation to understand how mediated tools (employed by learners) change the way interlocutors interact with one another to improve their language learning.

2.7.1 The Zone of Proximal Development (ZPD)

An important construct in Vygotsky's sociocultural theory is the ZPD, which is based on the idea that psychological development and instruction are socially related. To develop mentally, learners need to be provided with appropriate assistance. Once they reach a stage beyond their actual level of functioning and become capable of performing independently, the assistance can be withdrawn. For Vygotsky (1978), the ZPD is

the distance between the actual development level of the child as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (p.86).

The above definition indicates that the ZPD is not static but is in a process involving constant change through which learners are involved in a sequence of different stages of learning (Leong, 1996). In each stage, a new level of assisted performance continues to emerge which includes the acquisition of new skills, strategies, behaviour, and knowledge. The idea of the ZPD is further explained by Lantolf (1994) and Van Lier (1996) who suggest that the sort of activities learners accomplish with confidence are located within the area of 'self-regulation' whilst the range of skills that are out of learners' limits and can only be accessed with the assistance of others are located beyond this point.

From Vygotsky's point of view, the role of assistance is crucial in moving learners from an inter-mental phase to an intra-mental phase. To illustrate, learning entails both internal and social processes. As Vygotsky explained, '*every function in the child's cultural development appears twice: first on the social level, and later on the individual level; first between people (interpsychological) and then inside the child (intrapsyhological)*' (ibid, p. 57). This means that the process of learning development occurs first at a social level where it is driven by the collective views of others, and then it is extended to an individual level where learners start to create meaning and understanding within themselves.

Van Lier (1996) argues that assistance tailored to learners does not necessarily come from the teacher. He suggests that learners seek help from more capable peers or adults, equal peers, less capable peers, and inner resources. Thus, interaction in general works as a platform through which learners can understand the learning process, internalize information, guide their actions and acquire new skills. According to Arthur (2001), working with others can have a positive learning outcome. In terms of language learning, group work can help in developing learners' confidence, encourage them to be positive about making mistakes in front of others, and willing to take the initiative and take risks in order to explore the structure of the target language (ibid). Fleming and Hiple (2004) argue that such a social learning environment encouraged learners to contribute to group discussions, and engage in group related activities, which has been found to have an influence of the quantity and quality of communication (Chang, 2007; Dixon, 2011).

Another important argument in the sociocultural theory is the idea that the ZPD has limits. Vygotsky explained that learners cannot be taught new skills that are beyond their ZPD. Likewise, learning

development will not take place if the task is not challenging. As Ohta (2001, p. 11) states, an *'appropriate challenge is necessary to stimulate development in the ZPD'*. In other words, when skills are within or a bit higher than the learners' cognitive level, learning development is more likely to occur. On the other hand, if the task is either beyond the learners' ZPD or very easy, then learning will not take place. This is because a task that is too demanding is a source of frustration for learners which can result in learners ignoring, not coping, or incorrectly using it (Cameron, 2001). Similarly, when a very easy task is provided then their knowledge is not advanced (ibid).

Atherton (2009) extends this idea by proposing three levels of knowledge. Firstly, the 'Actual Development Level' in which a child's mental functions reach maturity as a result of previously completed developmental cycles. In other words, a child can reach a level of actual development when he/she can complete a task independently without any assistance. Secondly, the level which is described by Vygotsky (1978, p. 86) as *'functions that have not yet matured but are in the process of maturation; functions that will mature tomorrow but are currently in the embryonic state'*.

Thirdly, the 'Beyond-Reach-Level' which is related to the sort of tasks that are beyond a child's current mental capacity. Understanding ZPD functions can be helpful in explaining the reasons behind differences in learners' learning development as some tasks are easily achieved by some students whilst found to be overwhelming for others.

2.7.2 Scaffolding

The metaphor of scaffolding is related to Vygotsky's (1978) construct of ZPD and is used to describe techniques used by 'experts' (those more knowledgeable than the other) to bridge the gap between what learners know and what learners need to know. According to Wood et al. (1976, p. 90) scaffolding is *'a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts'*. Scaffolding serves as a supportive structure that helps learners to perform the task more easily without changing the task itself (Leong, 1996). As learners starting to show signs of mastering the new skills, the scaffolding is removed to give learners the opportunity of independent learning (Salkind, 2004). Within each set of new skills, experts construct new scaffolding to ensure that learners' ZPD and scaffolding are congruent with one another (ibid). Such a change in learners' responsibility from being spectator to a participant is what Bruner (1984) refers to as 'hand over principle', which refers to the point of view that the child's development moves from being observer to an adult's performance of a task, to a participant.

In the same sense, in the early stage of the learning process, the learner takes the role of an observer and a recipient. Once the learner starts to display an increasing ability to perform the task independently, the adult (or the teacher) hands over control to a larger part of the task until the learners reach the stage when he/she can perform the task independently

For Vygotsky (1978), a more knowledgeable other (MKO) means a person who has a better understanding or more highly developed abilities than the learners in relation to a particular skill or task. Therefore, in the language learning classroom environment, a MKO may be the teacher whose central role as an expert is to provide learners with the linguistic support necessary for the completion of a task at a higher level of competence. The teacher can also act as a facilitator to the learners by being actively involved with the learners by observing their needs and their current language learning abilities, and designing the language lessons accordingly. In addition, to make the most out of the scaffolding process, teachers have to ensure that the activities are suitable, interesting, and appropriate to learners. As Vygotsky (1991) states,

before you want to involve the child in some kind of activity, interest the child in it, being concerned to make sure that the child is ready for this activity, that all the child's strengths needed for it are exerted, that the child will act for him/herself, and that for the teacher remains only the task of guiding and directing the child's activity (p. 118).

The aim of the scaffolding process is to arrive at a stage where teachers can give up their assistance and let go of their control once learners demonstrate their independence and are ready for autonomous language learning.

In a learning context, scaffolds may also be more capable peers surrounding the learner or the guiding work of other learners during collaborative interaction with a novice. Such an interaction helps learners to mediate learning, reconstruct meaning, and assist each other in the creation of the ZPD. This is due to the fact that each learner is different, hence, he/she can share his/her strengths and weaknesses with each other in order to produce a higher level of performance. Research studies show that expressing and exchanging views with more capable peers or the teacher can enhance students' awareness of areas that need more work. (Xiaoli, 2008; Burkšaitienė, 2013; Murray, 2014). Several studies in the literature established that peers' work, in online learning setting for example, can work as a main source of guidance, support, and information whenever a knowledge gap is encountered (Hwang et al, 2016; Morita, 2004; Pollara, 2011; Hmelo-Sliver et al, 2008; Chang, 2007).On the other hand, Swain and Miccolli (1994) claimed that low proficient students, when

working with more proficient peer, would feel intimidated, and as a result, became passive in the learning task.

Based on Vygotsky's theory, peer interaction is crucial in the cognitive arena where it can be a substitute for a teacher's assistance in the case of genuine collaborative learning being observed among learners. As Well (1999) argues,

To learn in the ZPD does not require that there should be a designated teacher, whenever people collaborate in an activity, each can assist the others, and each can learn from the contribution of the others (p. 333).

However, various studies have concluded that teacher feedback is more valued by students than peer feedback (Hyland and Hyland, 2006; Lugendo, 2014; Kessler et al, 2012). Lugendo (ibid) attributed this to the quality of teacher feedback which can help students in evaluating their learning, identifying the strengths and weaknesses in their performance, and focusing on areas that need to be improved.

Another source of scaffolding can be provided via innovative technology which can be used to help learners move from assisted to independent performance. From a sociocultural perspective, technology (referred to as artefacts), can uniquely transform the way in which learners' cognitive activity is organised. This idea is referred to as a tool of mediation, which will be discussed in the following section.

Tharp (1993, p. 272.) proposed seven assisting performance strategies which can be used to bridge the gap in learners' performance in the ZPD.

- Modelling: allowing learners to imitate the way an expert accomplishes a task

- Feedback: providing learners with information to compare their performance to the target to be achieved

- Contingency Management: means of assistance by which the teacher rewards learners with social reinforcement such as praise or encouragement when they complete the task

- Instructing: providing information or requesting specific response to help learners in decisions making.

- Questioning: provoking learners' thinking and learning by requesting a verbal response

- Cognitive Structuring: offering structure or explanation which helps learners make sense of their new learning and allow for creation of new knowledge

- Task Structuring: modifying the task to help learners operate in the ZPD when the task is beyond their limit

Furthermore, Azevedo et al. (2004) suggested two types of scaffolding: fixed scaffolding and adaptive scaffolding. The former relates to a static scaffold, which is designed to help learners achieve the overall purpose of the learning task. Such scaffolds are not adaptable to meet learners' individual needs. An example of static scaffolding is a list of prepared explanations of the task given or a list of instructions that is given to all learners to help them perform the task. Adaptive scaffolds, on the other hand, are more adjustable to learners needs. These require a continuous diagnosis of learners' emerging understanding of the content of the learning task; and provision of timely support. Adaptive scaffolds can be provided by either human i.e. a teacher, parents, peers, or adults or by computerized tutors. For instance, when learners work on a series of reading tasks, the teacher provides support on unknown vocabulary based on each student's needs and abilities.

2.7.3 Tool Mediation

The idea of tool mediation is one of the main concepts of sociocultural theory and is based on Vygotsky's (1978) view that human activities or contact with the external world is indirect and mediated by tools. For Vygotsky, humans can change in nature and transform themselves by means of culturally constructed artefacts. This involves both physical tools such as technology, and conceptual tools such as language. Whilst the former serves as a means to manipulate physical objects, the latter is utilised to influence behaviour. According to Leong (1996), there are two functions of mediators. First, an immediate function is when a child is able to solve problems and perform activities independently without assistance of others. The second function has a long-term effect which helps to shaping a child's mind by transforming the lower mental functions into higher mental functions in order to facilitate further construction of knowledge.

The main concern in this concept is to understand how language mediates thinking. Vygotsky (1978) showed that children at their initial stage of using language try to direct their actions by talking to themselves, reflecting their experience to the world, and verbalising their plans. At a later stage, as they start to master the language skills, the relationship between language and activity changes. Children start to use their language as a means by which they can seek the help of those more knowledgeable when solving a problem. Thus, influencing other's behaviour becomes a central part of a child's practical activity where communication and interaction are integrated with the process of learning.

To sum up, in this section, the sociocultural notions of the ZPD, scaffolding, tool mediation and their importance in the process of language learning were discussed. The ZPD highlights the important role of social interaction between novice learners and experts in a joint activity in moving

learners from the potential development level to the actual development level. Social interaction in the view of SCT is not the transfer of knowledge from one person to another, rather it involves assisting the learners on a path of discovery where they can shape and construct their learning. Learners, in this sense, are encouraged to discover the most effective way of learning that suits their capabilities. The source of scaffolding for learning in the ZPD is not limited to human's assistance but it extended to include tools such as language, computers, and equipment. Such tools are important in the learning process as they help in reshaping the learning activity and changing the structure of mental function.

From the writer's point of view, the main SCT concepts are helpful in constructing a theoretical framework for developing learner autonomy. The theory revolves around three essential features that need to be taken into consideration when investigating learner autonomy in language learning. First, learners are viewed as being in control of their learning because they can decide when they can seek assistance from others and when to carry out the learning task independently. Second, SCT emphasises the role of teachers in the learning process in which they provide assistance, where needed, to develop learners' individual capabilities. Teachers in the SCT are not only instructors in schools but also more capable peers, experts, and adults. Third, collaboration and interdependence are viewed as tools for learning development implying that learning in collaboration with others help in transforming learners' cognition and communication ability.

The following section will explore the nature of listening and speaking skills and how these two skills are learnt. The next part of the discussion will focus on technology and learner autonomy with reference to the available literature on MALL.

2.8 Listening and Speaking Skills

Teaching and learning English as a foreign language studies reveal that communicative ability is an essential element in target language acquisition and interaction (Cohen, 2012). To understand approaches to teaching listening and speaking, we shall first explore the nature of those skills.

2.8.1 Listening skills

Listening can be defined as the ability to understand and comprehend the spoken language. Listening is believed to be an innate competence as it is the first language skill children learn in order to communicate with the world around them (Ghaderpanahi, 2012). In the context of ESL (learning English as a second language), listening is considered a complex process that includes four main elements namely: receiving, attending, assigning meaning, and remembering (Wolvin and Coakley,

1979). To be a successful listener, learners have to cover all these elements in a sequential process that entails perception of the spoken sounds, then recognizing the linguistic information in real time and analysing it before making meaning of the message and sending it to memory storage (O'Malley, Chamot, and Kupper, 1989). The perceptual processing stage involves listeners focusing on spoken aural input. This is considered to be the basic level of aural processing in which listeners mainly rely on their linguistic knowledge. The second stage is based on linguistic knowledge though it focuses on the knowledge of the language system including semantic and syntactic rules along with non-verbal signals. Listeners, in this stage, separate spoken sounds into chunks and then recombine the parts to transform them into mental representations. The final stage is where the listeners make a connection between their prior and existing knowledge in the long-term memory. For Buck (2001, p. 247), listening is *'a complex process in which the listener takes the incoming data, an acoustic signal, and interprets it based on a wide variety of linguistic and non-linguistic knowledge'*.

In order to understand the cognitive process involved in listening, it is important to emphasize two main comprehension strategies: bottom-up and top-down processing. The former relates to the knowledge of language. With this strategy, the listener attends to the acoustic signal in order to segment speech into identifiable sounds (Hedge, 2000). In other words, the listener infers meaning from the sound of speech. Such a process entails a challenge to second language learners as they need to be able to understand each word, phrase, clause, sentence and annotation pattern. With top-down processing, on the other hand, the listener applies his/her prior knowledge and expectations to understand the meaning of the oral message. Such a process does not require listeners to focus on grammar and vocabulary. Instead, it allows learners to infer meaning by making the link between the language input and their background information to guess, expect, imagine, and figure out (Hedge, 2000). Both processes of listening occur simultaneously and are mutually dependent (ibid).

In the same vein, Rost (1991) identified a combined approach in order to develop successful listening skills: 1) an integration of component skills, which includes listeners' perceptions, analysis, and synthesis skills. 2) making decisions about meaning as they listen by referring to their background knowledge: which covers areas on content, form, and context to then construct their meaning accordingly. To be a successful listener, Rost (ibid) suggested four strategy types exist which play essential roles in fostering listening ability: social strategies, goal strategies, linguistic strategies, and content strategies.

Despite being the most frequently used language skill, listening presents a challenge to many learners due to its implicit nature compared to the other language learning skills (Hulstijn, 2003). Anderson

and Lynch (1988) argue that there are a number of factors involved in affecting the level of difficulty of the oral message. These factors relate to the speakers' speed of talk, accent, and numbers; and to the listener's role, level of response, and interest in the subject. In addition, factors include clusters of the content such as grammar, vocabulary, and prior knowledge; and visual aids like pictures and diagrams that can support the listeners in their tasks.

2.8.2 Speaking skills

Speaking is regarded as one of the most important components of learning a language because it is the way to communicate with other speakers of the same language. As Fulcher (2003, p. 23) states, speaking is '*the verbal use of language to communicate with others*'. For Bygate (1987), speaking is the ability to employ knowledge of accurate grammar, vocabulary, and pronunciation to produce spoken sentence. However, Thornbury (2012) argues that speaking is not merely the production and pronunciation of accurate language forms. It is a process of operating language effectively and appropriately in real time in order to engage with a listener. According to Huang and Van Naerssen (1987), one of the main indicators of successful oral communication is students' ability to speak with their teachers and peers or with native speakers of the target language in real situations. Thus, the speaker is required to be 'fluent, intelligible, interactive, and contextually appropriate' (Thornbury, ibid, p. 199).

Due to its complex nature, acquiring speaking skills is found to be difficult for learners of the target language since it involves many factors such as age, context, and motivation; and requires a variety of processes. Besides the need for sufficient linguistic knowledge, speakers are required to develop their communicative competence which includes sociolinguistic, discourse, and strategic competences that enable them to convey their spoken message (Savignon, 1983). Therefore, learners must consciously have control over their language especially in real life situations. To do so, this involves four stages as proposed by Levet (1989) as a model of speech production:

- Conceptual preparation, which concerns conceiving the message and planning its content

- Formulation, which refers to long term memory knowledge of grammar, vocabulary, and discourse

- Articulation, which refers to the physical production of the spoken message

- Self-monitoring, which involves adjustments, correction of mistakes to make their message acceptable and comprehensive

With so many factors related to the speaking process, approaches to the teaching of this skill are varied. One distinction is between direct and indirect approaches. A direct approach refers to teacher-controlled activities such as drills, pattern practice, and manipulating of dialogue scripts that provides learners with control over discrete language aspects (Richards, 1990). According to Richards (ibid), a direct approach is '*planning; a conversation programme around the specific micro-skills, strategies, and processes that are involved in fluent conversation*' (ibid, p. 77). An indirect approach, on the other hand, is a spontaneous process, which focuses mainly on meaning and comprehensible output without direct attention to form. For Burns (1998), an indirect approach involves learners in communicative speaking activities which focus mainly on their ability to use the target language in real life situation. Similarly, Hedge (2000) and Oxford (1997) suggest various speaking tasks be integrated into the language speaking class to give learners opportunities for developing their skills through free discussion of a range of topics, acting out certain roles within a social setting in a role play; and processing information with other learners in information gap tasks. Such activities are believed to foster collaboration between learners, which helps in improving their communicative skills including listening and speaking.

The first part of this literature review covered the major perspectives of learner autonomy in language learning including different definitions, and versions. Pedagogical issues for enhancing autonomous learning such as learner training, and the difficulties in assessing learners' autonomy were also explained. In addition, the section examined the principles of language learning strategies in terms of concepts, and classifications. The review also included a discussion of the relationship between learner autonomy, language learning, and motivation. Moreover, this part outlined the main concepts of sociocultural theory including ZPD, scaffolding, and tool mediation. Then, the main aspects of listening and speaking skills were then considered as they are the main focus of the language leaning course implemented in the current study.

In the next part, attention will turn to the relevance of Computer Assisted Language Learning (CALL) to the teaching and learning of listening and speaking skills and to learner autonomy followed by a discussion of mobile learning approach.

2.9 Technology and Language Learning

This section presents some examples of how technology can change the way language is taught and learnt, in particular, the teaching and learning of speaking and listening skills.

2.9.1 Technology Assisted Listening and Speaking

Despite the results of various research studies on the benefits of technology-based programmes for a number of language learning skills, studies focusing on the positive impact of technology integration into second language listening and speaking classes have received less attention. In fact, in some of these studies researchers have claimed that computer software and the Internet are not comparable to face to face communication in terms of developing learners' oral skills (Egbert, 2005). However, supporters of technology-based approaches argue that computer technology can assist learners in developing, practicing, and improving their listening and speaking abilities in a second language by providing them with opportunities to involve themselves with the target language (Chapelle and Jamieson, 2008). For example, computers can provide learners with opportunities for authentic language use with other learners using interactive communication tools. Computers also can help learners in enhancing their listening skills by playing natural human speech along with full-screen interactive videos (ibid).

In Hwang et al.'s (2016) study, students' performance improved when working on their listening and speaking tasks through listening to each other's audios, comparing their contributions, identifying mistakes, and then revising and modifying their own product. Vandergrift (2004) points out that visual information provided via computer technology can facilitate listening comprehension. Likewise, Lynch (1998) states that using videos had a positive impact on learners' motivation and attention levels. One reason reported in the literature is the sense of control computer technology offers to learners (Glass and Carver, 1980; Gay, 1986; Ross et al., 2010; Karich et al., 2014). Such an increase in control has been found to be beneficial for learner satisfaction (Liaw et al, 2010; Ilic, 2013). In other words, technology-based activities can help listeners in slowing down the process, and capturing the spoken message in text. In addition, since listening comprehension requires extensive practice of the target language, the Internet offers unlimited resources for learners to access a large number of educational and authentic materials available online (Timothy and Kukulska-Hulme, 2015; Dudeney, 2000).

To develop speaking skills, on the other hand, computer technology can help learners in producing the sound of the target language by practising pronunciation skills either through software, apps, or by imitating models of words and sentences provided on the Internet (Celce -Murica et al., 1996). Furthermore, since communication with other learners and in particular native speakers of the target language is an essential element in developing their speaking abilities, technology has been found to be helpful in this sense. According to Egbert (2005), technology can assist learners in achieving their

learning goal by facilitating their interaction with more fluent learners as well as native speakers of the other language through conversation via different software such as Skype, MSN, and videoconferencing. Moreover, computer can allow learners to check their oral message and correct their mistakes, which is particularly useful for students with issues of self-confidence, anxiety, and communication apprehension (Butler-Pascoe and Wiburg, 2003).

2.9.2 The Role of CALL in Autonomous Language Learning

Computer technology can provide language learners with opportunities for independent and interdependent learning by enabling the construction of knowledge and developing language skills (Wolff, 1998). In fact, much has been written about the value of computer-assisted language learning, which appears to have important implications for autonomous language learning (Benson, 2004; Littlemore, 2001; Schwienhorst, 2003; Blin, 1999). As Schmenk (2005, p. 107) argues, *'the popularity of learner autonomy may be at least partially related to the rise of computer technology and growing importance of computers in language learning environments worldwide'*. In Shetzer and Warschauer's (2000) view, autonomous learners are those who use online resources and search for appropriate materials to answer their own questions and, by doing so, they progress. They go even further to claim that teaching learners lifelong learning skills and helping them to become autonomous learners are facilitated in a classroom context where language professionals have access to the Internet. For them, such learning and teaching can encourage exploration, allow for more decision-making, and provide more flexibility in the learning process. Based on this argument, the underlying concepts of CALL and learner autonomy are thought to be the ideal combination for language learners. This is due to CALL being able to contribute unprecedented options for language learning by providing opportunities for interaction, collaboration, and facilitate a learner-centred approach (Schwienhorst, 2002).

Another benefit of CALL in developing skills associated with autonomy is that CALL can help learners to maintain control of their learning. Benson (2001) assumes that in the CALL environment, learners are provided with opportunities to exercise control over their learning. For example, they can have control over the selection of materials and topics, choose a mode of learning, i.e. either individual or collaborative with peers, and decide their own pace. The history of CALL programmes shows a considerable number of applications, which were designed to provide learners with some level of control over some aspects of learning. While earlier applications allowed for some control over pace but offered limited choice over the mode of instruction, e.g., learners were provided with pattern drills to follow in order to find the correct answer, more recent technologies

allow for broader options. For instance, access to the Internet offers learners control over interaction, and facilitates self-access language learning (Benson, ibid). Kamhi-Stein's (2000), for instance, argue that the asynchronous learning environment in online learning enables students to participate at their convenience, which is found to have a positive impact on students' desire to work with other learners. Other research studies claim that asynchronous tools enable both interactivity and reflection that is not possible in traditional face to face communication (Ducate and Lomicka, 2008; Hobrom, 2004; Williams and Jacobs, 2004; Oravec, 2003).

As far as the effectiveness of CALL for learner autonomy is concerned, developments in computer technology, and especially mobile technology, offer an extensive set of tools with the potential for supporting learner autonomy. In other words, mobile technology can be considered an ideal enabler which can offer learners personal choice and the ability to choose modes of learning suitable for individual needs, and can contribute to learners' persistence (Song, 2000). This will be discussed in more detail in the next part of this literature review but first it is important to look into the meaning of mobile learning and how it differs from other technology enhanced learning.

2.10 An overview of Mobile Learning

In this part of the literature review, the writer examines a set of documents related to the concept of mobile learning in an attempt to identify clusters of different perspectives, ideas, interpretations, and debates generated by experts in the field of mobile learning. Papers from conferences, journal articles, reports, projects and pilot studies have been analysed and discussed in order to map the variety of ways to define this term, to ascertain the current state of knowledge and theories, and to outline emerging trends and themes in the literature.

2.10.1 A Conceptualization of ML (Mobile Learning)

Arriving at a precise definition of the term has been a challenge for many researchers and educators. The inherent difficulty comes not only from it being a new fast-changing phenomenon but also because of the ambiguity of the term 'mobility', i.e. whether it refers to the mobility of learners or the technological devices they are using (Kukulska-Hulme, 2009). Therefore, the notion of mobile learning has been conceptualised differently based on the variety of visions involved. Three concepts were identified as the key components of the term: mobility of the device, mobility of learners, mobility of context.

Typically, mobile learning has been defined in terms of utilising lightweight, portable devices ranging from smart phones, PDAs, tablet computers and including MP3 players, e-readers, and memory

sticks (Kukulska-Hulme, 2005). According to Traxler (2005, p. 262), mobile learning is '*any educational provision where the sole or dominant technologies are handheld or palmtop devices*'. Kinshuk (2003) shares the same view in which he suggested that the 'M' in m-learning is a signifier which stands for the delivery of learning content via mobile devices and therefore allows for 'anytime, anywhere' learning.

The above definitions look at M-learning from a technological point of view, where capabilities and affordances of the devices are considered as an essential part in performing all the functions needed in ML. However, focusing on one aspect of M-learning, i.e. technology, undermines the wider context of learning by confining its meaning to the physical use of the device.

Many researchers have realised the limitation of such a definition and called for a proper understanding of the term, in which the learner's experience and the learning process have been given sufficient attention (Traxler, 2005; Kukulska-Hulme, 2009). O'Malley and her colleagues (2005) also defined mobility from the learner's point of view and considered mobility of learners instead of focusing on the technology itself. They defined M-learning as '*Any sort of learning that is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies*'(ibid, p. 7). Such a vision embodies the 'anywhere, anytime' factor, which offers the opportunity to move beyond constraints of location and time and allows access to a wide range of information as well as a means of communication either with other learners or teachers across the world. Indeed, the availability of mobile technology can expand the learning experience by facilitating communication, creativity and collaboration (Wagner, 2005).

El-Hussein and Cronje (2010), attempted to provide a comprehensive interpretation of the concept in the context of higher education, by arguing that the notion of mobility should not be linked only to mobility of location. Three complementary and inter-related elements of the term have been suggested: first, the mobility of the device in which learners are able to participate in activities within and outside the classroom. Second, mobility of the learning process, where the learners' behaviour would change as they use the mobile devices. Thirdly, it includes the attitude of those students who are characterised as being highly mobile in their employment of the emergence technology.

This view is also emphasised by Sharples and his colleagues (2007) who tried to unpack the notion of mobility. They offered a wider perspective without disregarding the properties of the device to be used. To them, mobile learning is a combined experience which consists of mobility of context, time, physical technology, and conceptual space. In this sense, it is impossible to attribute one meaning to

the concept of mobility. As an alternative, we must consider different relationships between each aspect to reveal a more global picture of the term. Thus, following the above view, mobility signifies the utilisation of portable technology on the move, where learning and learning materials with different learning themes and topics can be accessed at any time, across various locations, and within different social groups, either formally or informally.

Sharples and Roschelle (2010) have suggested three phases of mobile learning namely: in-classroom, outside classroom, and as a part of everyday life learning. The first phase is based on the idea of equipping classrooms with handheld response systems that was used 60 years ago. Such systems were used to enrich the learning experience by provoking discussion based on different responses to open questions. Despite not being mobile, these systems represented the first effort to use technology for learning. Recently, '*wireless handheld devices offer new learning opportunities for rapid sharing of data and knowledge, simulation and visualization, and computer-managed group work'* (Sharples and Roschelle, ibid, p. 4). Thus, the first phase is mainly concerned with exploring the various type of technology and making productive use of the affordances of mobile technology for leaning.

The second phase is characterised by the affordances and learning opportunities provided by the most recent mobile technology. It is assumed that these technologies will be used in non-formal settings such as home, museums, field trips and workplaces. The focus of this phase is on the learner's mobility and supports the movement between several locations. The third phase emphasises bite-sized learning[1] and personalised learning. In this phase, learning is no longer restricted to a certain time, place, or topic. It is integrated in everyday life where students can access the learning material at any time and move their knowledge across different contexts and transfer it to other learners across the globe.

In a first step to better conceptualise learning via mobile technology, Sharples et al. (2007) proposed that learning is not the product of one individual or the utilisation of a certain technology; it is instead the product of shared dialogue between learners and technology to advance learning. Hence, learning in the mobile age is *'the process of coming to know through continuous conversations across multiple contexts amongst people and interactive technologies'* (ibid, p. 22). Their view is based on a developing theory of mobile learning based on a conversational framework. Such a framework was used to account for the interaction that occurs between learners and technology and is shaped by continuous negotiation

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[1] Bite sized learning refers to the type of leaning in which content are suitable to be delivered and rendered on mobile devices and requires short time duration (Kukulska-Hulme et al., 2005).

in order to acquire the knowledge needed. Accordingly, the constraints of time, place, and curriculum in the conventional classroom are replaced by a 'cybernetic process' through which creation, exploration, and negotiation of knowledge are provoked between community (i.e. people), mobile technology, and physical environment. This new vision of mobile learning provides new dimensions in understanding the complexity of the concept. This helps in re-conceptualising the term to consider other influencing factors including learners, activities, culture and context instead of focusing only on technology.

The emphasis of the technological foci in defining m-learning, perceived as a techno-centric view, remains controversial. However, researchers such as Kukulska-Hulme (2009) still argue that the operation of certain devices in the domain of mobile learning adds a unique aspect to the learning experience that differentiates it from other learning approaches.

To sum up, viewing ML from different perspectives can help in understanding the concept. As discussed in this section, the literature on mobile learning shows three perspectives when defining the concept. The first one captures the significance of mobile technology and focuses on the technical features of mobile devices that differentiate them from other learning technology. The second view held by other researchers who believe in the significance of learners' experience in using such devices in learning. This view takes account of learners' mobility and their ability to learn anywhere, anytime without neglecting the technical features of mobile technology. The third view concerns with mobility of context in which learners can overcome the constraints of location by deploying mobile technology in their learning. A further explanation of the concept was offered later with an entirely new dimension that relies on a more theoretical basis. Such a view considers the interaction between technology and learners and accounts for other influencing factors such as context, culture, learners and activities.

Whether the definition is techno-centric, context-centric, learner-centric or theory centric, it reflects the significance of mobile learning and helps in amplifying our understanding of the concept. For the writer, the concept can be viewed in terms of the learning opportunities provided anywhere, anytime and facilitated by the affordances of mobile technology. Thus, mobile learning in this thesis refers to the use of mobile devices to facilitate learning anywhere and anytime; and to create learning opportunities inside and outside classroom in which learners have control of the learning process and can work individually and collaboratively.

To understand how mobile learning is implemented in educational settings, it is crucial to explore the fundamental nature of such an approach to learning in terms of benefits and opportunities it enables and the challenges it entails. These issues are the subject for discussion in the next two subsections.

2.10.2 Potential Benefits of Mobile Learning

The rapid changing of mobile technology urges the need, especially for educators, to understand the capabilities of these new devices and consider the different possibilities they offer learners in different situations, which can lead to valuable outcomes in teaching and learning (Bates, 2005). Different activities in learning can be enabled by utilizing the different affordances these devices can offer. For Norman (1988), every tool has affordances, but these possibilities are perceived differently in terms of what they can facilitate, hinder, or influence. For example, most mobile phones are designed for non-educational purposes, but they have been used by many learners as a means to facilitate different learning tasks. Therefore, one can argue that affordances in this case refer to the way learners adopt, adapt, and use them to facilitate their learning.

In order to understand the potential of new technology in supporting learning and assisting learners in constructing knowledge, research is needed to: fully explore the possibilities and limitations for learning, improve access to learners, and use these technologies in accordance with institutional policies (Kukulska-Hulme, 2005).

Klopfer and his colleagues (2002) suggest four key opportunities afforded by mobile learning. Firstly, mobile devices are depicted to be portable due to their small size and weight, which make them easy to carry and move. In fact, mobile devices can compensate for the limitations of larger technology as they can be used in multiple contexts with ease and convenience (Kakihara and Sorensen, 2002). Secondly, social interactivity is another property of mobile devices, which has the power to promote collaboration and interaction between learners alongside empowering engagement and facilitating communication. In fact, the establishment of social networks promoted by the use of mobile devices for learning has been found to increase a feeling of connectedness among learners which would result in positive interpersonal relationships between them (Ilic, 2013; Schwarz et al., 2000; Cochrane and Bateman, 2010; Ling and Helmersen, 2000). Thirdly, the property of connectivity allows learners to create a shared network by connecting their devices to others in order to access learning materials ubiquitously and being able to communicate with the learning websites. Fourthly, context sensitivity which refers to the way in which formal and informal learning can be linked as they encourage learning in a real-time context and can act as a bridge between learning inside and outside the classroom (Sharples, Corlett, and Westmancott, 2002).

As Kukulska-Hulme et al. (2009) state,

views of formal education as the transmission or construction of knowledge within constraints set by a curriculum, calling instead for the exploitation of technology in bridging the gap between formal and experiential learning (p. 9).

In addition, mobile technology is considered as a potential platform that can enable the conditions for collaborative learning and communication among students (Becta, 2004). This has been attributed to the fact that mobile technology offers learners opportunities to collect and share data in real-time, and transmit and deliver rich multimedia content (Kim et al, 2006, Naismith et al, 2004). Through mobile devices, learners can also give and receive feedback from other learners and the teacher while involved in the learning process (Chen, et al. 2002). In fact, the different communication channels, such as e-mails, messages, blogs, meeting platforms, and forums accessible by mobile technology improve the social interactivity between both learners and teachers, and among learners themselves as Denk et al. (2007, p. 130) state,

Social interactivity and data exchange are supported by different (synchronous as well as asynchronous) communication channels, improving the reachability of peers, teachers and learners as well as the accessibility of learning material and assessment, which facilitates coordination, cooperation, and hence, collaboration

Furthermore, mobile learning is well suited to different contexts as it offers learners the possibility to interact with students whenever they are located. For Ryu and Parsons (2009, p. 11), mobile learning enables the conditions for collaborative learning by '*strengthening the organization of the learning material and information, supporting communication among group members, and helping the coordination between the learning activities*'.

2.10.3 Potential Challenges

As with any new technology, there are challenges in incorporating mobile devices into learning. Naismith et al. (2004) pointed out some of the challenges associated with issues in mobile assisted teaching and learning. 1) Mobility, mobile devices encourage 'anywhere, anytime' learning through which students are allowed to work continuously across different contexts (Passey, 2010). Such learning permits students to gather, access, and process information out of the classroom, which poses challenges to conventional teaching practices because this can change the way learners work or study. In other words, the increase in learners' mobility and their ability to bring information from outside the classroom would increase the possibility of students' access of inappropriate content. This would be an issue of concern for many schools and educational institutions especially if students were able to violate the school policies and escape its supervision (Naismith et al., ibid).

Besides, the unplanned, unintentional, and incidental learning, which can be acquired through students' social interaction with others, via television and newspapers, and even through involving in an accident or an embarrassing incident, may clash with the educational institutions policies that require more structured, planned learning that are likely to occur in classroom within lesson plans and evaluations. 2) Informality, O'Malley et al. (2005, p. 53) pointed out the importance of mobile devices for students' privacy and identity, '*The facts that mobile phones are very personal in nature, have constant presence on the user and are highly important to teenage identity'*. Thus, the informal use of the device for learning within the classroom environment could encroach on students' social network; hence, students may consider this as a threat to their privacy and could result in abandoning the use of mobile devices in school settings. 3) Ownership, identified as one of the five critical success factors in designing any mobile learning project through which individual and group learning can be supported (Naismith and Corlett, 2006; Naismith et al, ibid). Although owning a personal device and bringing it to the classroom could add a sense of belonging and commitment to the learning process, it can create a challenge for educational institutions to control students' use of the device when they use it in the classroom. As Naismith et al. (ibid, p.4) state, '*students want to own and control their personal technology, but this presents a challenge when they bring it in to the classroom'*. 4) Learning over time, a challenge is presented to learners because they need effective mobile devices to organize, record, and retrieve their mobile learning experiences. To illustrate, when mobile learning is implemented, learners would need to make the decision between '*minimal functionality-low cost models and high price-greater range of functions models'* when choosing the device that they use for learning. (O'Malley et al., 2005, p.58). Such a choice would create a challenge for students in terms of the cost this may entail, as they would need to upgrade their devices to the latest model available in the market to be able to access the different learning materials and the variety of educational applications.

Other barriers identified in the literature include: wide diversity among mobile devices (Lee et al, 2005; Stone, 2004), the lack of a theory specifically developed for mobile learning, which hampers effective assessment and pedagogy (Sharples et al., 2007), and limiting physical attributes such as small screen sizes (Stockwell, 2007, 2008; Wang et al., 2009; Park, 2011; Hashemi et al., 2011) and a short battery life (Trifonova et al., 2003; Corlett et al., 2005), though this may be eliminated or at least alleviated through the introduction of more advanced technology.

The next section continues to explore the notion of mobile learning by comparing it to other technology-enhanced learning.

2.10.4 From eLearning to M- Learning

Due to the ongoing development in technology, different terminologies and acronyms have been used in the literature, which mainly related to the use of computer for learning (Son and Windeatt, 2017). For example, Computer-Assisted Learning (CAL), Computer- Based Learning (CBL), and Communication Technology (ICT) are all refer to the use of computers for learning, whereas Network-Based Language Learning (NBLL), Web-Based Language Learning (WBLL) and Mobile-Assisted Language Learning (MALL) are used to refer to the use of specific forms of technology in the field of language learning (ibid). The variety of computer-based technologies has resulted in broader terms including eLearning and digital learning (ibid).

Therefore, any M-learning activity is an eLearning activity. Quinn (2002, p. 1), for example, viewed M-learning as *'e-learning through mobile computational devices: palms, windows CE machines, even your digital cell phone'*. He argued that M-learning is a part of the macro concept of eLearning in which learners have the opportunity to access various resources and interact with other learners regardless of time and space. The same argument is mirrored by Georgieva and Smrikaov (2004). They propose that Mobile-learning is an intersection of distance and electronic learning which compensates for the limitations found in previous approaches bound by availability and connectivity. In this light, the 2011 Mobilearn conference report concluded that M-learning is not a distinct learning method. Hence, it would never replace the existing learning approaches whether traditional or e-learning methods. It may, however, be used as a medium to enrich and broaden the learning experience of learners by tackling conditions that prevent them from participating. As Leung and Chan (2003, p.76) state,

'It is predicted the next phase of electronic learning development will be focused in mobile learning. Mobile learning is the point at which mobile computing and electronic learning intersect to produce an anytime, anywhere learning experience'.

However, there are some differences between eLearning and M-learning identified in the literature. As observed by Sharma and Kitchens (2004), what distinguishes the two disciplines with regards to the learning environment is the flexibility of learning. According to Traxer (2009), eLearning is more likely to take place when time and location are dedicated to learning, hence, students are expected to work in front of a computer whether in the classroom, computer clusters, or at home. Learning in e-learning mode is not exclusive to the use of a computer but includes other electronics such as CD Rom or watching an educational programme on the television. On the other hand, learners in M-

learning mode can work from any location, at any time using a mobile device (ibid). What facilitates such a feature of M-learning is the portability and personalisation characteristics of mobile devices. Portability refers to the type of devices that can be moved from one place to another. Such a function can help learners to extend their learning and provide them with the ability to go beyond the restrictions of the classroom. Thus, learning can occur in multiple contexts, which allows for more continuity and communication between the classroom and other different contexts. For example, waiting in the bus station or travelling on the way to school is no longer a wasted time because learners could make it a potential learning time with the support of mobile devices use. In terms of personalization, using these devices allows learners to adapt them to their needs and find ways to use their mobile devices for learning. Traxler (2007), points out that mobile devices support single users by recognizing their diverse needs and delivering learning according to the desired time and location. Examples of these devices include mobile phones, tablet devices, PDAs, laptops, and video games consoles (Naismith et al., 2005).

Another difference identified in the literature refers to the formality of eLearning in contrast to the informality of M-learning modes (Ozuorcun and Tabak, 2012). While in eLearning, the learning process is driven by learning objectives set up by teachers, stakeholders, and educational institutions to achieve a defined learning outcome, in M-learning learners are driven by their own interests, goals, and motivation. Moreover, even in situations when learners use their mobile devices in classrooms, the formality of the classroom would diminish when learners combine what they learn in the classroom with the information they bring from outside the classroom (ibid).

Despite the differences, when we look at M-learning and eLearning, it seems there are common aspects in terms of the learning process and the teaching process. Both eLearning and M-learning are learner-centric process in which learners' sense of independence is stimulated by the use technologies (Leung and Chan, 2003).

The discussion above shows that learning on mobile devices is not a replacement for the existing mode of instruction, but an extension, which can be used along with other modes of content delivery in order to expand beyond the pre-prepared learning materials and activities. Such a function can help learners to extend their learning and provide them with the ability to go beyond the restrictions of the classroom.

Having looked at mobile learning in general, and what it can bring to the learning process, I will now turn to the role of mobile devices in language learning.

2.11 Mobile Learning for Language Learning: Mobile Assisted Language Learning (MALL)

Mobile Assisted Language Learning is a sub-category of both M-learning and Computer Assisted Language Learning which increasingly attracts the attention of researchers and scholars in the field of language learning. In fact, MALL is considered an emerging approach to language learning that is enhanced through the integration of handheld mobile devices and wireless networking in order to access authentic language learning content, and increase communicative language practice (Vavoula and Sharples, 2008). As Kukulska-Hulme (2012, p. 7) states '*Language practice on mobile device can also be seen as a stepping stone towards more authentic communication'*. As mentioned earlier in the previous sections, the attributes of mobile technology, in particular portability and connectivity of the devices, make them best fitted for language learners who have limited access to language materials and practice either due to shortage of free time or boundaries between classroom and the external world. Thus, it has been argued that the main difference between MALL and CALL is its use of such portable devices that allow for new ways of language learning focusing mainly on the continuous and spontaneous access and interaction access context (Kukulska-Hulme and Shield, 2008). In MALL, learners are not required to sit in a classroom or at a fixed place to get the learning materials. Instead, learning is more personalized, situated, and authentic (Kukulska-Hulme, 2009). In addition, MALL facilitates the implementation of good language teaching philosophy, i.e. promotion of learner autonomy in which they can:

- Create and share multimodal texts
- Communicate spontaneously with people anywhere in the world
- Capture language outside the classroom
- Analyze their own language production and learning needs
- Construct artefacts and share them with others
- Provide evidence of progress gathered across a range of settings, in a variety of media (Kukulska-Hulme, Norris, and Dononue, 2015, p. 7).

Since learners and teachers are the active agents in shaping the language learning process, Kukulska-Hulme and her colleagues (2015) provide a framework (see figure 1) for mobile assisted language teaching and learning for teachers when implementing mobile pedagogy in foreign and second language teaching both in and outside the classroom.

Figure 1: A pedagogical framework for mobile assisted language teaching and learning adopted from Kukulska-Hulme, Norris, and Dononue, (2015, p. 8)
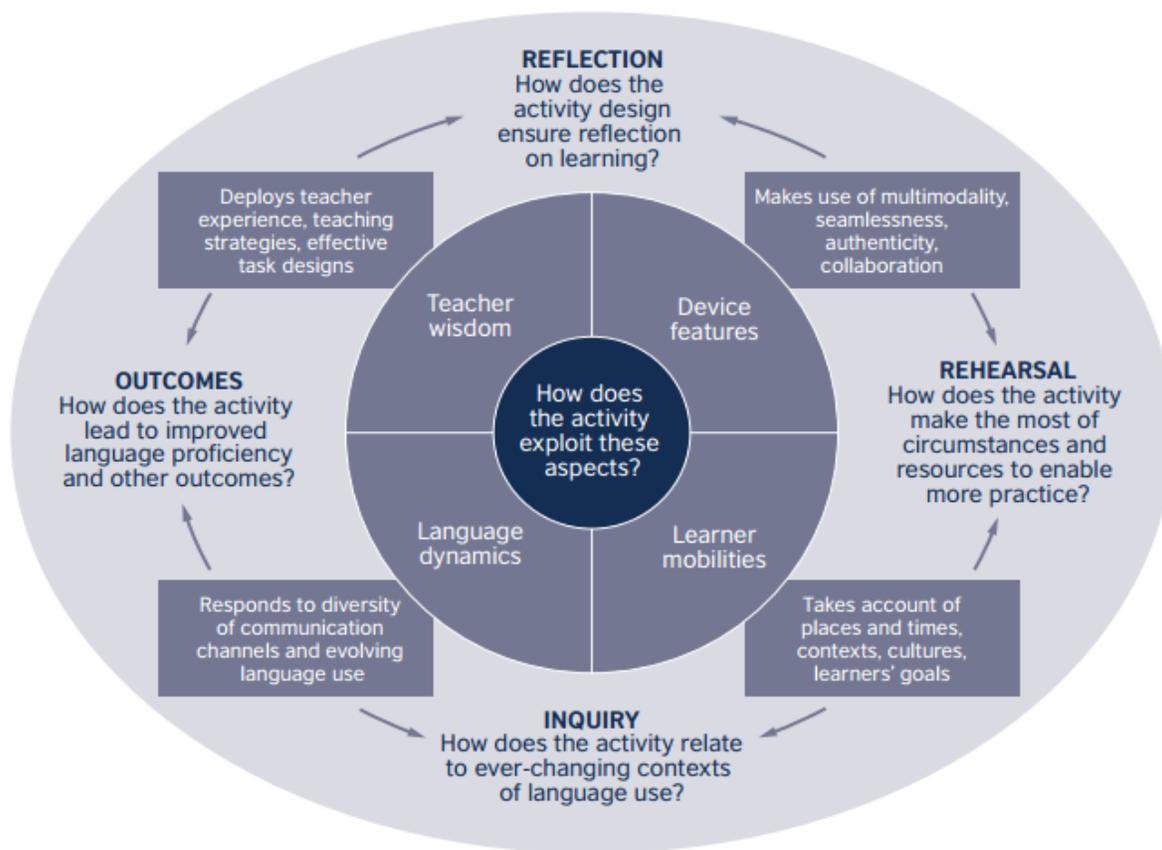
Such a framework functions as a guide to help teachers consider the difference between designing language learning activities for mobile learners and those for conventional activities. Four 'connecting concepts' were suggested which are linked to the four areas presented by Kukulska-Hulme, Norris, and Dononue (ibid): 1) Teacher wisdom, which refers to the teacher's role and experience. 2) Device features, which focuses on multimodal functionality of mobile technology that assists learners' communication, collaboration and language rehearsal. 3) Learner mobility, which is attributed to learners' movement across place and time. 4) Language dynamics, which takes account of advances in communication technology that can be used to teach, practise and initiate the target language. In addition, Kukulska-Hulme and her colleagues demonstrate different ways to apply this framework in the language learning classroom by analyzing language activities and connecting areas that emphasize: outcomes, inquiry, rehearsal, and reflection.

Kukulska-Hulme et al. (2015) illustrate such a framework by giving an example of its application to a course book task in which the task is presented and analysed according to the spheres and connecting concepts of the framework. The 'Personalsing course materials' task focuses on the

language that is related to the description of the spaces and rooms in different locations such as home, classrooms, and campus buildings along with the furniture and resources found within. In the print course book, the dialogue is provided via audio CD or MP3 and video while the photos are provided from a generic library stock. The task has been amended by applying the pedagogical framework as can be seen in the table below.

Table 1: An Example of the application of the pedagogical framework for MALL to a language task adopted from Kukulska-Hulme et al. (2015)

Spheres	
Teacher Wisdom	The teacher uses her/his experience and knowledge to enhance students' motivation and engagement. Thus, he/she decides to personalize the task by replacing the course images and recording with more authentic materials generated by students. In addition, the school location and classes are utilised as a source of the target input.
Device Feature	The capabilities and functions of mobile devices in particular the built-in camera and recording feature are used by students to make different recordings and take images of the school classrooms, homes, and other location of their choice.
Learner Mobility	Students learn across different contexts including their homes, school, and other locations of their choice by taking different pictures of these spaces and share them with others.
Language Dynamic	By replacing the textbook images and recordings with those generated by students in different contexts, the language is brought to life from flat pages to meaningful real life language use and practice.
Connecting Concepts	
Outcomes	Encouraging students to personalize their learning materials and produce authentic artefacts for their learning.
Inquiry	Students are expected to use dictionaries and other resources such as search engines to identify lexis needed to describe the different locations and furniture they captured in their photos.
Rehearsal	Students are expected to practise the language by rehearsing the language they use to describe their photos or make their recording. In addition, they might identify the gaps in their L2 and recognize their abilities.
Reflection	Students would be able to reflect on their creation including the photos they captured and the recording they made and notice their mistakes. Such a process can be facilitated by students' collaboration and discussion with both the teacher and their peers.

Since this study investigates learner autonomy in a MALL environment, it is important to examine MALL in light of the theoretical foundation underpinning the current study. This brings the discussion back to the sociocultural theory and its relevance to Mall. In the following section, the writer demonstrates how SCT concepts have been applied as an analytical framework for studying MALL.

2.12 The Application of Sociocultural Theory to MALL

The sociocultural theory and Mobile Assisted Language Learning fit well together. One of the main constructs in sociocultural theory is that learning occurs in a social context in which the reconstruction of knowledge involves collaborative group work, social interaction, and sharing with others either through direct interaction or via mediated tools (Reed et al., 2010). Such social learning

helps confront learners' misconceptions and contributes to expanding their cognitive schemata[2]. Thus, it can be inferred that a MALL approach can make a significant contribution to the process of social learning as it can promote social connection. In other words, MALL helps facilitate learners' access to other learners 'anytime and anywhere'; and may improve learners' communicative abilities by allowing for knowledge sharing and informal use of technologies outside the classroom. As Kukulska-Hulme et al. (2009, p. 16) states '*inherent characteristics of mobile technologies are particularly well suited to support learning rooted in social, constructivist, contextual and collaborative principles'.*

Another reason for using SCT to study MALL is the clear relevance of the concept of tool mediation (See section 2.7.3 Tool Mediation). According to this concept, mobile technology is considered a mediating tool, which can help in transforming and manipulating the learning activity.

Technology, in this sense, is perceived not only as a product but also as a process that helps capture and channel learning (Jonassen, 1990). Thus, mobile technology serves as a means by which learners can facilitate their language learning, gain access to others, explore a variety of views, obtain different information, and have access to learning materials, be provided with feedback, and achieve control over their learning. Through tool mediation, learners are allowed to shape and define their activities in order to achieve their learning goals.

To sum up, realising the full potential of tablet devices and their relevance to language learning, SCT can be chosen to provide guidance and an analytical framework for the implementation, evaluation and design of a proposed mobile language learning course. The chosen theory provides the main principles underlying the learning experience, which is designed to provide learners with the opportunities needed to enhance their language learning, take control, and construct their language knowledge.

In terms of the position of the current study in relation to Vygotsky's notion of tool mediation, the study is concerned with exploring the way tablet devices, in the context of MALL, mediate language learning and with examining how learners' activities change when these new tools are introduced. In fact, the sociocultural theory concept of tool mediation is applied in this study to examine learners' communication and interaction with others when mediated by mobile technology, (in particular the

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[2] Cognitive Schemata as described by Fodor (2009, p. 177) is 'the basic element of thinking, that it is nothing more than a mental model of a certain aspect of the outside world. So, almost everything that assists thinking can be considered as a cognitive schema'.

iPad device), across time and space to accommodate cognitive, metacognitive, and social development and enhance their autonomous learning.

In order to determine whether introducing new technology in the educational setting will help or hinder learners, it is important to examine such an impact empirically. In the following section, research studies on MALL are presented.

2.13 Research Studies on Mobile Assisted Language Learning

In regard to second/foreign language learning, several studies have given a strong indication that MALL has a positive impact on learners' language skills such as vocabulary, pronunciation, reading comprehension, grammar, listening and speaking.

For vocabulary learning, Song and Fox (2008) undertook a study in which three undergraduate Chinese learners of English were tracked to investigate their ways of supporting their learning by using PDAs (Personal Digital Assistant, an electronic handheld device with applications such as word processing, spreadsheet and personal organizers) to maximise their incidental English vocabulary learning. The study adopted a multiple- case study design and was carried out over the period of 12 months. Data was collected via electronic journals, student artifacts (screenshots and files of PDAs activity) and interviews. The study focused on answering the question of how the PDA was used and perceived by the students. The results revealed students' varied use of the PDA device to enhance their learning. This included downloading an electronic dictionary to solve vocabulary problems, and integrating the use of communication tools like email and MSM to enhance their vocabulary learning. It was also noticed that students used the PDAs in conjunction with other types of technology such as computers, which helped in shaping their vocabulary learning activities. In addition, the study indicated that student motivation and independence were increased since they were able to define their language needs and manage their learning. The study concluded with a recommendation to consider factors related to students' learning needs and factors related to students' context such as time, place, institution, and technologies; before integrating mobile technology approach into a course. However, results of this study cannot be generalised since the findings were based on the results from small sample i.e. three participants.

Another study was conducted by Levy and Kennedy (2005) who created an SMS-based vocabulary learning course (Telstra Mobile Online Business Service) to teach Italian to a group of 18 intermediate proficiency level students. The SMS system was designed to send prepared messages to students' mobile phones at frequency of two to three per day over a seven-week period. The content

of the SMS messages revolved around the syllabus and the learning objectives of the course. This included vocabulary-course related messages, idioms, definitions, and examples sentences from a novel the students studied during the course, to the learners. The main aim of the study was to investigate the efficiency of recall of prompt messages i.e. a message containing a prompt, which was sent three days after the introduction of a new vocabulary item, to increase students' word retention. Student feedback was collected via telephone, a snap poll in class, a questionnaire, and focus group interview. Findings suggested that messages were helpful for vocabulary learning. Receiving SMS messages may have enhanced learning by triggering students' active learning between classes. This resulted in interconnectedness between in and out of class activities in which students tended to use their grammar books and dictionaries more often, consider translation, and produce personal dictionaries for vocabulary learning. Kennedy and Levy (ibid) pointed out the importance of technology integration in any learning course, as it has to be appropriate for the objectives and purposes of the learning course. Kennedy and Levy's claim about the success of their trial in using SMS for language learning purposes is questionable. First, it is not possible to relate any improvement in vocabulary learning to the SMS system because students' language development was not measured. Second, their conclusion that SMS are an effective way of communicating with students, however, is debatable. This is because the majority of students reported that the received messages did not trigger any discussion with other students.

To bridge the gap between formal and informal learning, Wong and Looi (2010) carried out a study to teach prepositions and idioms using network enabled pocket PCs and mobile phones. Two related case studies were carried out with forty students, aged eight and eleven years old. Students in this study were assigned a mobile phone by which they required to take photos outside the classroom that illustrate the meaning of the words and prepositions introduced in the formal classroom. Students, then, were encouraged to upload these photos onto the web in order for their classmates to comment on and create a collaborative learning environment. Findings of the study showed the advantages of using mobile devices in promoting students' seamless learning[3]. Students in this study activated their learning of prepositions and idioms by associating their in-class learning with what they experienced in their daily life outside classroom. In addition, learners referred to their peers to

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[3] 'Seamless learning is when a person experiences a continuity of learning across a combination of locations, times, technologies or social setting. Such learning may be intentional, such as when a learning activity starts in a classroom then continues through an informal discussion with colleagues, or online at home. It can also be accidental, for example, when an interesting piece of information from a newspaper or television programme sparks a conversation with friends' (Sharples et al, 2012).

scaffold their learning through ongoing discussion and comparisons of the photo/sentence sets posted on the assigned 'idiom page'. The authors concluded that the interconnection between formal and informal learning enhanced productive learning and acquisition of the language. As with Levy and Kennedy's (2005) study, it was also claimed that appropriate implementation and design of MALL can change students' language learning.

As far as reading activities are concerned, MALL offers various opportunities. According to Chen, Teng, Lee, and Kinshuk (2011), the static information provided via print text is of relatively limited assistance to learners who encounter reading difficulties. To compensate for this limitation, Chen and her colleagues integrated QR (Quick Response Code) along with mobile devices into the paper-based reading activities in an advanced business English and communications class at a public university in Taiwan. While the QR printed codes were used to encode the URLs of the digital materials, the mobile phones were used to scan such codes in order to access the predesigned digital resources. Two articles, from the course book, were selected by the researchers to be used as the reading materials. The digital materials associated with the QR consisted of audio clips with the teachers' explanation of vocabulary, audio reading of the texts, and class video clips.

There is not enough details about the sample of the study. The only information available is the number of the sample and their educational level i.e. seventy-seven students including, 14 juniors, 9 seniors, 8 second year college students, and 46 graduate students participated in a quasi-experiment which was designed to evaluate the effect of integrating digital materials and scaffolding questions on students' reading comprehension skills.

 The total length of the experiment was 90 minutes divided into 15 minutes pre-test, 10 minutes instructions, 50 minutes reading the two texts and doing the post-test, and 15 minutes completing the questionnaire, but there is no information about the length of the study which might indicate that the study was carried out in one day. Results indicated that the digital materials did not have any significant influence on students' reading comprehension in contrast to the reading strategy of scaffolding questions, which significantly enhanced students' understanding of the reading texts. In regard to QR codes, students found them to be beneficial for enhancing their understanding of the text although further improvement of the efficiency of the codes was suggested: improving the design and arrangement of the QR codes on printed paper, the interface design of the system, and the precision of the process of using the camera to scan the QR codes. Such results confirm Levy and Kennedy's (2005), and Wong and Looi's (2010) studies in which they emphasised the significance of MALL design in the success of any learning activity.

However, a possible limitation of this study is that the study findings were driven from a 90 minutes experiment using two reading texts. The researchers did not provide any information of whether the digital materials were used for an exam preparation or not. Throughout the paper, it seems that the materials were used in an experiment. This is because students were randomly selected from different groups which means that they were of different cognitive abilities and undergone different courses. The impact of the digital materials on students' reading comprehension in this case cannot be considered to provide conclusive evidence because students were exposed to only two reading texts in less than two hours, which may have led to cognitive overload. Besides, participants of the study were from different educational levels, which means that they were of different cognitive abilities and had followed different courses. Such a difference in their abilities would have an impact on their grasp of the reading texts and the digital resources integrated within the texts. Another issue is related to students' opinions about the digital materials and the use of QR codes, which were gathered 50 minutes after students' exposure to the digital materials. This would raise the question of the 'novelty effect' that could wear off after a while.

In terms of listening and speaking skills, Demouy and Kukulska (2010) compared the use of iPods/ MP3 players and mobile phones to extend students' practice of listening and speaking within a French language course at The Open University. Data was collected using weekly online questionnaires, email, and recorded oral feedback. The study was conducted over six weeks with two groups of 35 volunteer students: one group used iPods and the other group used mobile phones. The first group was instructed to download materials available on the course website, and listen to a series of audio clips which consisted of dialogues, short presentations and sample answers, short listening comprehensions, pronunciation and intonations activities, prompted dialogues, and grammar practice drills. The second group, on the other hand, was required to engage in an interactive listening and speaking activities by accessing a voice response system using their mobile phones. The results indicated that using both iPods and mobile devices had a positive impact on the practice of speaking and listening skills in which students were able to maximise their exposure to the language in different settings and time that suited their lifestyle. However, some students, from the second group, found the course to be challenging due to the limited functionality of their devices. It is important to note, however, that the study was conducted in 2009, which raises the question of whether advances in technology could improve the usability of the device or not. In addition, it is not clear whether the lack of learner training or other issues that related to cost or internet connection might attributed to the second group dissatisfaction with the course. The study

concluded by suggesting the need to help learners in recognising the value of such a form of learning for authentic communication because not all learners can realise that value.

Aljarf (2012) investigated students' experience when using their own mobile devices (smart phones) for additional listening and speaking practice. Aljarf used 900 short audio files on MP3 players with two groups of EFL Saudi College students (N=90) in order to practise listening and speaking outside the classroom. Both control and experimental groups were exposed to the same in-class instructions and studied the same materials. However, the experimental group was required to listen to a series of MP3 self-study English speaking and listening lessons outside the classroom. Data was collected via pre-post-tests and a post-treatment questionnaire. Scores from the pre and posttest were converted into percentages and were analysed statistically using three statistical tests: t-test (to find out the significant difference in ability between experimental and control groups prior to the study), paired t-test (to find out the significant difference between the pre and posttest for each group), and ANOVA test (to find out the significant difference between experimental and control groups' posttest mean scores). The findings indicated that the experimental group outperformed the control groups in listening and speaking. Such results were attributed to the extra practice students in the experimental group received via the mobile learning material. Results also revealed that using MP3 extensive listening and speaking activities promoted students' vocabulary development, grammatical correctness, auditory discrimination of vowels and consonants, listening comprehension, and oral expressions. In addition, the findings suggested that such an approach to learning benefited average students more than poor and above-average students as the former found the course to be challenging in terms of increasing their workload whereas the latter were already familiar with the sentences practiced.

However, the findings of Aljarif's (2012) research are debatable because the study had no evidence to show that the improvement in students' performance was the result of using the audio materials. To illustrate, the study did not control other variables such as the likelihood of students' using other forms of practice outside the classroom, and the teacher's identity. Therefore, there might be a number of other factors, which may have contributed to the positive findings. In addition, it is important to highlight that the results of this study were based on just one posttest. The impact of mobile technology on listening and speaking skills may not be verified due to the lack of an extensive post-test procedure for the different aspects of L2 learning that were measured.

However, other studies have suggested that the ambitious aims of MALL are falling short due to the limitations of the mobile devices being used, i.e. smart phones, iPods, laptops, netbooks and PDAs

(Wang et al., 2009). For example, the cabling and short battery life of laptops has limited its use to the classroom. The laptop attached screen was found to create a barrier between teacher-student and student-student interaction which resulted in students' inability to engage in classroom discussion (Marmarell and Ringle, 2011). Likewise, iPods, smartphones and netbooks have hampered the potential of MALL due to several drawbacks such as small screen size, short battery life and low storage capacity. For example, a study by Mueller et al. (2011) examined the integration of mobile devices as a learning tool into elementary schools and how such an integration was perceived by both teachers and the students. The study included two elementary schools and the data was collected through classroom observations, surveys, student journals, and interviews. In the first school, seven junior classes ranging from grade 1 to grade 6 participated in the study in which students used the iPod device within the classroom and at specific times. On the other hand, in the second school, two classes from grade 7 and 8 took part in the study in which each student received an iPod to be used in and outside the classroom. The study found a positive attitude towards the use of the iPod as a learning tool. The students appreciated the opportunities provided by the devices, which they used as a research tool for 'locating information', 'answering questions', and 'searching for pictures'. In addition, the device was perceived as being enjoyable, fun, and convenient. However, students from the second school were less enthusiastic about using the iPod outside classroom. In fact, they preferred the laptop over other the iPod though they found them to be useful in places where computers were not available. Such a preference was attributed to the small size of the device which posed some problems in viewing and typing. Although one can argue that these limitations are mainly technical, we cannot deny that such shortcomings affect the whole MALL experience; hence, hindering achievement of the learning objectives of such instruction. As a result, many research studies have been undertaken to explore the value of using other mobile devices such as tablet tools, in enhancing language learning.

Before presenting finding of studies on tablet devices, it is important to explore the main features of these devices, particularly the iPad, in order to clarify the reasons for claiming they are more appropriate for M-learning.

2.14 New Technology and New Practice in Language Learning: MALL with the iPad

The emergence of a relatively recent advance in mobile technology, the iPad, has prompted change in providing learners with an easy access to efficient pedagogy (Manuguerra and Petocz, 2011). According to Murphy (2011), the Post-PC Devices (PPDs) as he refers to the iPad or its analogue

equivalents play a significant role in realising the merit of M-learning and compensating for the limitations of prior devices.

Although it is beyond the scope of the current study to give an extensive technical overview of PPDs, it is worth providing a brief description of the main features possessed by such devices, particularly the iPad, to demonstrate how it can compensate for the limitations of prior devices. The iPad has a large multi-touch display screen (9.7 inch) which resembles the size of a textbook. According to Henderson and Yeow (2012), this feature can enhance students' learning experience, as they feel more involved, motivated and engaged. Other unique characteristics include its light weight, long battery life (about ten hours), built-in microphone and camera, built-in APP Store which enables learners to access a wide range of educational applications (around 20,000 out of 275,000 APPs) and a page layout which can be altered from portrait to landscape. In addition, the iPad has a streamlined design with no peripheral attachments, such as cabling, mouse or keyboard; and no distracting buttons. Alternatively, it has a virtual on-screen keyboard and a single control button. In fact, the highly usable and simple platform of the iPad reduces the learning curve that typically occurs when using technology (Demski, 2011).

The combination of these features makes such devices stand out amongst previous generation mobile technology due to their unique design which combines laptop functionality with smartphone portability (Murphy, 2011). However, the latest generation of tablet computers including the iPad have been criticized as being tools targeted at consumption and not creation. Murray and Olcese (2011) conducted an analysis of 30,000 applications provided by the Apple Store and directed at iPad consumers. They claimed that the iPad was not suited to recent learning theories which emphasize learners' collaboration, creation and construction of knowledge; rather, most applications were mainly drill and practice-based which designed for content consumption (ibid). On the other hand, results of several studies (Morrone et al., 2012; Henderson and Yeow, 2012) indicate that the portability, usability and mobility of PPDs enhanced students' creative exploration, thus facilitating the generation of content and increasing students' productivity. In addition, Murphy (2011) demonstrates that some elements possessed by these devices, in particular the large screen size and large storage capacity, along with the available word processor, spreadsheet, and slideshow programs extended their potential from solely delivering course materials to aiding generation of knowledge.

While PPDs, more specifically the iPad, are new products, many schools, institutions and universities have started to develop an interest in utilizing these devices as a learning tool. As a result, many pilot projects have been carried out to incorporate such devices in the educational sector: The exact way

in which the iPad is used varies as a result of the multiple possibilities that the device offers. For example, one of the first educational institutions to adopt the iPad device in schools was Redoubt North Primary School, New Zealand, where Henderson and Yeow (2012) carried out a study to identify issues and benefits involved in using this technology in schools. They explore how the iPad has been used in an educational context with six classrooms, consisting of 30 students aged 9-12, were assigned 5-6 iPads to be used in class time on a daily basis. The iPad was used both individually and in groups based on the objectives of the lesson and the expected learning outcomes. Data was collected through semi-structured interviews with the key school staff and was analysed using content analysis. Results suggested that the portability of the device facilitated student collaboration as it enabled peer-to-peer interaction, which resulted in richer content creation. When compared with previous experience in working with netbooks and desktop computers, the iPad was found to be more convenient as it allows for 360-degree viewing and supports a multitouch screen feature, which enables students to interact with other members of the group at the same time. On the other hand, netbooks typically have a single-touch screen with primary interaction being using a keyboard and trackpad. Such a design makes it difficult for students to interact with each other and view the content when using one device amongst groups. Alternatively, students using netbook would have to take turns to use the device and crowd around each other to view the content. As for the desktop computer, teachers reported the difficulty encountered in bringing a group of students to the computer to work collaboratively. However, while a group of students can view the device together, only one of them at a time can operate it at a time which resulted in some students monopolizing the device. Distractions were also reported as an issue with using the device in school setting.

In a higher education context, the iPad was used as an e-reader in a research study carried out at Pepperdine University, USA. Bush and Cameron (2011) initiated a qualitative pilot study across a three-term period which aimed to investigate the perceived effectiveness of iPad devices on teaching and learning. The subjects of the study were seven faculty members and 35 students enrolled in a Masters course. Students were given iPads with pre-loaded course reading materials and applications. A multi-methods approach to data collection was adopted which consisted of surveys, individual interviews, focus groups, and classroom observations. Both faculty members and students reported their satisfaction with the device which was felt to have a positive impact on students' engagement, collaboration and participation. These findings were attributed to usability and mobility of the device and to the variety of applications offered by Apple iTune Store. Students also reported their satisfaction with the device in terms of its positive impact on the frequency of reading due to its portability feature. However, most of the students did not feel that the device had affected their

reading performance in terms of duration, speed, comprehension and participation. In addition, students reported their disappointment with some of the features of the iPad such as the on-screen keyboard which was found to be inconvenient for academic writing i.e. students found it difficult to take notes about course on the iPad using the soft keyboard especially in the portrait position and reported difficulty in typing efficiently with it. However, students and faculty members in this study reported a positive attitude towards the use of the iPad as an e-reader and recommended it for digitalized materials.

As mentioned, although the research at Pepperdine University identified many benefits of the iPad, no perceived effects were found on students' reading skill. One of the reasons for this finding may be the limited use of the device. In other words, the device was utilized only in-class with a single application (iAnnotate), with no use being made of other educational applications such as iBook or iTunes web-browsers, or email. Moreover, the electronic materials offered on the iPad via iAnnotate did not make use of features like e-dictionaries, sound, hyperlinks, animations and search engines which might have enhanced the students' reading experience.

Another iPad-based learning project which was designed to enhance students' oral proficiency level is Lys's (2013) study. In her research, she provided thirteen intermediate high to advanced level learners of German, iPad devices to complete course assignments. Lys investigated how integrating such a device can facilitate interactions and provide scaffolded assistance. The data was collected through speech samples of student's recordings, self-reported activities, and questionnaires. The study was carried out over the period of nine weeks in which students involved in real-time conversational tasks via FaceTime application. Results of the study indicated that the use of the iPad devices helped students in improving their oral proficiency level in terms of the amount and quality of the oral production. On average, students in Lys's (ibid) study were involved in speaking activities on FaceTime for twenty-four minutes per week. In addition, there was an increase in the length of the recorded speaking assignment from one minute at the beginning of the study to more than seven minutes by the end of the study. Students were found to be more confident and competent in terms of their oral speaking skills despite the increase of the linguistic complexity of the language task. The reasons for such improvement attributed to the integrated scaffolded nature of the learning activities when using the iPad device.

Tablet devices have also been used as a means to foster learners' independent leaning. In an action research conducted in South China University of Technology, Chen (2013) carried out an action research with 10 freshmen intermediate level learners of English aged between 17 to 20 years old.

The study investigated students' usage of tablet devices to learn English outside the classroom, and focused on factors such locations, activities, and students' experiences when working with tablet devices for language learning. Students' attitude and perceived effectiveness of the devices were considered as well. A mixed data collection method was applied in which data was collected from learner activity reports and interviews. Findings revealed that providing students with tablet devices was not enough to foster independent learning. Chen (2013) claimed that the lack of knowledge and experience in using such new technology hindered students' experience in using tablets for language learning. Thus, to create an effective accessible learning environment with MALL, instructors' guidance and support was found to be vital if better learning outcomes were to be achieved (Chen, ibid). In terms of students' attitude, results revealed a favorable attitude towards the usability, effectiveness, and satisfaction of tablet devices for language learning.

In this section, it is worth mentioning Al Fahad's (2009) study, since it was undertaken in the context of Saudi Arabia. The study reported on the results of a survey of 186 female undergraduate Saudi students to investigate their attitudes towards and perceptions of the effectiveness of mobile learning. The findings indicated that about 25% of students agreed that learning with mobile devices can be an effective and supporting method of learning, while 31% stated that such an approach to learning can help in improving student-teacher communication. In addition, 24.7% of students perceived the mobile learning provided access to new learning opportunities. Students also believed that mobile assisted learning can increase the flexibility in accessing different learning material available online. Overall, the majority of students in this study hold the notion that the mobile technology has the potential to enrich their learning experiences. However, there is also a lack of information on the students' mobile learning experience and whether they actually used their mobile devices for learning or not, making it difficult to pinpoint the possible reason for the positive outcome in the study.

2.15 Limitations of other Research Studies and Implications for the Present Study

The studies reviewed in the section above leave several questions that need to be answered. First, despite the various studies that have been carried out in the area of MALL as a growing field of research and the encouraging results for the use of such an approach to support learning; the use of tablet devices for language learning inside and outside the classroom as a language learning tool is relatively little researched. Most of the studies focus on the affordances mobile devices can offer as a new means of content delivery without attention being given to the opportunities these devices can bring to the learning process or how learners actually use them to facilitate their language learning in different contexts. According to Kukulska-Hulme (2009, p. 163) it is the time to '*move beyond a*

superficial understanding of the field and focus more on how mobility, accompanied by digital/location-aware technologies, changes learning'. Thus, the current study focuses on an under researched area in MALL literature, which is exploring language learners' use of tablet devices as part of their daily routine of language learning practice.

Second, previous research findings relating to MALL; have been based mainly on learners' self-reported data. In contrast to the present study, this research attempted to overcome the limitation of methodologies in other studies by utilizing a mixed methods data collection approach that covered different sets of data, including questionnaires, focus-group interviews, think aloud protocol, student diaries, and online tracker logs.

Third, the long-term impact of MALL on learner motivation is an issue that is not explored in many studies. According to Sharples (2013), a number of research studies have based their results on the 'novelty effect' of deploying mobile devices for learning with no consideration to the long-term effect as he states,

researchers often reflect on the possible 'novelty effect' of using a mobile device for learning, which could wear off after a while. Currently there is a lack of longitudinal studies establishing longer term impacts on motivation

Therefore, this study includes some longitudinal research techniques in order to investigate whether students sustained their motivation to use the tablet devices for language learning over a long period of time (twenty four weeks after the end of the study).

Fourth, most of the previous studies assessed students' motivation in the traditional classroom. Thus, the present research compensates for the paucity of research that relates to the connection between MALL and the role of motivation by providing deeper understanding of the scope of MALL activities on these aspects of motivation.

Fifth, although there is a growing number of studies that focus on exploring listening and speaking skills, and collaborative learning supported by mobile technology, more studies need to be carried out in order to have a better conceptualization of the role of MALL in enhancing language learning skills. Therefore, this study is expected to make a significant contribution to the body of research on MALL by providing insight into the changes such an approach can bring to listening and speaking skills on the one hand; and collaborative learning on the other.

Sixth, there is a lack of research on MALL in general (and regarding tablets devices for language learning in particular) in developing countries like Saudi Arabia, where the educational language

classroom is seen as the context of a more traditional approach to language learning. Thus, this research fills the gap in the literature on higher education students' use of mobile devices for language learning in developing countries.

2.16 Summary

This chapter started with an overview of the major perspectives of learner autonomy in language learning including different definitions, and versions. Pedagogical issues for enhancing autonomous learning such as learner training, and the difficulties in assessing learners' autonomy were also explained. In addition, the chapter examined the principles of language learning strategies in terms of concepts, and classifications. The review also included a discussion of the relationship between learners' autonomy, language learning, and motivation and the theory that underpins the present study: the main concepts of sociocultural theory including ZPD, scaffolding, and tool mediation that have been incorporated into the design of the current research study. Then, the main aspects of listening and speaking skills were then considered. The chapter moved on to give a brief outline of the relevance of CALL to learner autonomy. Then, the attention was turned to the mobile learning approach as it discussed the main perspective of mobile learning in terms of definitions, classification of mobile technologies, and the different principles between e-learning and m-learning approaches. The potential benefits and challenges in the context of mobile learning were also explored. In addition, the chapter dealt with the notion of mobile assisted language learning and outlined findings from existing literature concerning the use of mobile technology for language learning. In terms of the tablet device employed in this study, the iPad device and its main technical features along with the potential advantages and limitations were discussed. The chapter concluded with a critical review of the research studies on MALL which led to identification of the gap in the literature and justified the objectives of the present study.

Chapter 3: Methodology

3.1 Introduction

This aim of this chapter is to present the methodological procedure undertaken in conducting the research study. It starts with an outline of the main research aims and research questions that guided the investigation. This is followed by the research philosophical standpoint and an overview of the mixed method research methodology. The context of the study, the participants, and the rationale for the research design are presented followed by a discussion of the design of the research instruments and data collection procedures. The chapter also provides details about the issues of data validity, reliability, trustworthiness, and pilot study. In addition, the ethical concerns, and my role as a researcher are provided at the end of the chapter.

3.2 Research Questions

The purpose of the current study was to investigate the extent to which iPad and iPad-like devices can contribute to the development of students' autonomous language learning. More specifically, it sought to explore whether the multi-modal functionality and affordances of the iPad device, when utilised in a Mobile Learning environment and introduced in a teacher-guided EFL course, can promote students' language learning autonomy.

The study was guided by the main research question: What evidence is there of Saudi students' autonomy in their approach to learning English as a Foreign Language? In order to investigate the issues raised in this study, a mixed data collection method was adopted, in which a combination of data collection instruments was used, including: questionnaires, focus group interview, student diaries, think aloud protocol, and online log file. The primary task of this research study was to explore the following research questions as illustrated in the table below.

Table 2: Research questions and instruments to investigate them

Research Questions	Source of Evidence
1. What language learning strategies do students appear to use during the course and how do these change as the course progresses?	Questionnaire Think aloud protocol Online tracker
2. Do students work collaboratively and how does this change as the course progresses?	Focus group interview Learner diaries Online tracker
3. What motivation do students have towards learning English and how does this change as the course progresses?	Questionnaire Focus group interview Learner diaries
4. What motivation do students have towards using tablet devices for learning, and how does this change as the course progresses?	
a. To what extent do Saudi students think this approach supports or limits language learning?	Focus group interview Learner diaries
b. Do Saudi students continue to use the tablets to learn after they complete the course?	Focus group interview Online tracker

3.3 The Philosophical Orientation

The research paradigm is essential to any researcher as it frames how he/she views knowledge, and provides the procedures and techniques needed to carry out a research study and interpreting results (Collins and Hussey, 2009). According to Creswell (2009, p.74), a paradigm is a '*basic set of beliefs or assumptions that guide a researcher's inquiry'.* Three main concepts of inquiry guided the paradigm, namely, ontological, epistemological, and methodological (Lincoln and Guba, 1985). The ontological concept is related to how we perceive the world and determine what we can know about it. In other words, it is our view of the nature of reality. Epistemology, on the other hand, refers to the relationship between the knower and knowledge, how researchers envision the nature of reality and frame their interaction with what they are researching. As Holden and Lynch (2004) explain, epistemological views of reality raise the question of whether the researcher is part of the nature of knowledge or external to it. The answer to this question will affect the third concept, which is the research methodology. In fact, a researcher's ontological and epistemological assumptions of knowledge will guide how he/she makes decisions and carries out a research.

Several theoretical paradigms are discussed in the literature but the main two are the realist/positivist and naturalistic /interpretivist paradigms. The realist/positivist framework suggests that reality exists independent of the experience of other individuals and that the world is formed by a law of causation which can be objectively tested (Gibbs, 2007). Thus, the main goal in realist/positivist research is to test a theory, measuring quantifiable variables, and generalise the findings obtained. On the contrary, interpretivist views the world as a multiple set of realities which can be co-constructed by both participants and researchers in the natural world by using a set of different methodological

procedures (Denzin and Lincoln, 2005). Therefore, the main focus in an interpretive approach to research is *'participants' views of the situation being studied'* (Creswell, 2003, p.8). Such a paradigm enables researchers to investigate human experience in a natural setting rather than artificial experiences in controlled settings. As Eisner (2005) states, interpretive paradigms

are less concerned with the discovery of truth than with the creation of meaning… the creation of images that people will find meaningful and from which their fallible and tentative views of the world can be altered, rejected, or made more secure (p. 74).

From the above discussion, I would say that the current study operates within the interpretivist paradigm. In terms of ontology, the study embraces the view that learning is socially constructed. To learn a language, learners cannot separate themselves from their environment, the classroom, other learners, and the situational constraints that shape their learning experience. In addition, the belief that underlies the current study is that learner autonomy requires teacher guidance and a tool by which students can develop their learning practice in and outside the classroom and exercise a greater level of flexibility and control over their language learning, and increases their involvement and motivation.

Concerning epistemology, I believe that reality is not limited to one set of evidence or numbers; rather it is the product of different entities. Therefore, in this study, there are no predefined variables or hypotheses, but an attempt to explore students' learning experience in a particular setting by interpreting the results obtained from different types of data. This was carried out by a means of different instruments for the collection of data, which were used in order to obtain meaningful insights and multiple perspectives. A further explanation of the choice of the mixed methods approach is explained in a following section.

3.4 Qualitative and Quantitative Continuum

In applied linguistics, researchers tend to differentiate between two research approaches, which are commonly referred to in the literature as qualitative and quantitative research. To begin with, Langdridge (2004) defined qualitative research as concerned with the quality of a social problem, and its link to an individual's own experience and viewpoint. A unique feature that relates to qualitative research is its flexibility, which requires researchers to be open to changes, i.e. to readjust and refine their research questions and scope during a study (Dörnyei, 2007). Such changes may be attributed to several factors relevant to the design of qualitative research. Firstly, the setting, which usually takes place in a natural uncontrolled context to enable a high level of involvement on the part of the

researcher, helps in examining the situation closely without any manipulation or influence (Creswell, 2003). Secondly, the nature of qualitative research is usually an exploratory one in which the pre-existing-knowledge of a certain phenomenon is very limited (ibid). In other words, qualitative research is an appropriate research design to adopt when exploring a new area of concern.

Other features, which distinguish qualitative research from quantitative research, are data collection instruments and the sampling strategy. Since qualitative research is concerned with exploring an individual's feelings, experiences and responses, data needs to be obtained from different perspectives that include but are not limited to observation, interviews, diaries, and records in the forms of images and texts (Seliger and Shohamy, 1989). Regarding sample size, qualitative research tends to be on a smaller scale due to the labour intensive, time-consuming demands of analysis (Crabtree and Miller, 1992).

The philosophy that underlies the qualitative research paradigm is based on constructivist views. It is the complexity of the multiple views obtained from individuals, attempting to understand and explore the world around them, which urges the need to understand each perspective from a different angle. Thus, relying on individuals' subjective opinions requires accessing such information using different data collections that focus on word meaning.

In contrast to qualitative research is quantitative research. According to Longbridge (2004, p.13), quantitative research is that which '*concerns the quantity or measurement of some phenomenon*'. Based on this definition, quantitative research relies on the concept of accurate measurement that contributes to our claims about certain phenomena; such measurement requires a highly structured and focused procedure to gain the necessary results. Therefore, quantitative research is characterized as being scientific and experimental, particularly due to the elements needed to undertake such kinds of research. For instance, setting up an experiment requires random assignment of subjects, a controlled setting (which usually takes place in a laboratory), and the use of statistical language and terminology. Richards et al. (2012) explained that the scientific nature of quantifying research enables researchers to attend to their aims of generalization and representation of the study results. In turn, such a design will result in more reliable and replicable data.

The philosophy of quantitative research stems from the positivists' deterministic philosophy with the main concern of identifying the relationship between variables, and studying the interrelated causes and effects of certain phenomena (Creswell, 2003). In fact, positivists challenged the absolute truth of knowledge by following the idea of falsification and confirmation. To illustrate, confirming an

assumption or a hypothesis regarding a certain problem in language learning or teaching requires valid tests and empirical cases in order to seek evidence. Therefore, through a series of processes of falsification, verification, and confirmation one can attend to reach a conclusion to support one's claim (Richards et al., 2012).

However, quantitative research design has been criticised as being 'overly-simplistic' because it gives only a general perspective of the issue being investigated, especially when it comes to the hidden reasons of the problem at hand. By contrast, qualitative research is mainly concerned with individual cases and particular points of view to reach to an 'in-depth understanding' of the research issue (Dörnyei, 2007).

Despite the differences regarding the qualitative and quantitative dichotomy as identified in the literature, the line of division is still not clear. For Grotjahn (1987), such a distinction is over-simplification, since the two types of research tend to interact on three levels: data collection methods, resulting data type, and data analysis. For example, processing qualitative findings using data collection instruments such as think aloud protocol would transform such data into textual form, a subsequent analysis would entail some aspect of quantitative method since some data will need to be quantified, especially when it comes to a field like applied linguistics. Therefore, it is better to view research design as a combination of qualitative and quantitative instead of merely a dichotomy.

In this research, the qualitative data collection method was adopted as the primary research data collection method in order to obtain a rich set of data, yet, the quantitative data collection method was also used as an appropriate supplement.

3.5 Approach Taken: Mixed-methods

This study adopted a mixed methods data collection approach as the most appropriate approach to investigate the issues of inquiry. Mixed methods is a major type of research, which involves elements from the continuum of qualitative and quantitative methods. Johnson et al (2007, p.129) defined it as '*an intellectual and practical synthesis based on qualitative and quantitative research; it is the third methodological or research paradigm*'. According to Dörnyei (2007), the mixed-methods paradigm follows a mixing of the two methodologies at two levels at the stage of either data collection or data analysis. For example, a quantitative study (which aims at explaining the relationship between variables) can benefit from the narrative use of language in order to explain numerical data. Such a combination can aid a researcher in compensating for the limitation of one research methodology by using the strength of the other. It

can also help increase the validity of the research study by providing different sets of data that can explain the complexity of a phenomenon using a multi-level analysis (Creswell, 2003). In other words, the likelihood of maximizing the implications of one data set (and providing added meaning) increases when another means of data collection is utilised. The concept of combining two methodologies within a single research is based on pragmatism which focuses on all the aspects related to the problem being investigated, thus, the door is opened to different interpretations and analysis by selecting more than one method of addressing issues or questions (Creswell and Clark, 2010).

The combination of research methods has resulted in developing different procedures and strategies to be undertaken. Creswell (2003) identified three strategies: 1) Sequential, in which data can be collected in phases in order to expand the results of one data set by using another data collection method (for example, starting with a survey for the sake of testing a theory followed by interviews with small a sample size to elaborate on the results in depth). 2) Concurrent, in which data is collected simultaneously and followed by analysis-level integration of the results. 3) Sequential Transformative, in which the theoretical perspectives or conceptual framework of the researcher guides the study. The main aim of using this strategy is to use the methods that will best serve the theoretical perspective of the researcher. Such a design includes qualitative and quantitative data collection phases in which either phase can start first.

Having looked at the three research method paradigms in the field of applied linguistics, it is clear that there are several considerations a researcher must take into account before starting their journey that provide a platform to conduct a study. As for my own research study, I decided to adopt the concurrent strategy in which the quantitative and qualitative data collection occur at the same time in order to validate the results and provide a comprehensive analysis of the issue at hand. Then, the researcher integrated the results obtained from both the qualitative and quantitative methods at the data interpretation phase. Choosing such a design is based on my interest in the 'how' rather than focusing on the 'what' in studying students' use of iPad and iPad-like devices in relation to the fostering of autonomous language learning when involved in mobile learning.

3.6 Research Design

3.6.1 Case Study

A case study is an in-depth investigation of a group of people, an individual, institution, community, organisation, or phenomenon within its real-life context (Dörnyei, 2007). In fact, a case can involve

anything as long as it consists of a particular entity and a well-defined bounded system within a specific time and location (Merriam, 1998, Stake, 1995, Yin, 2009). A main feature of a case study is the detailed information gathered from multiple data collection methods, including but not restricted to interviews, questionnaires, diaries, and observations (Leaky, 2011).

The case in this study is the experience of a group of Saudi students of a syllabus in an EFL course on the iPad under the guidance of their instructor. Case study design was selected as the most appropriate design for the aim of this project because the research is exploratory in nature as it focused on understanding a particular experience of one group of students to gain a greater understanding of the Saudi context in which the study was implemented as well as the reaction of the participants.

The case study design facilitated the researcher's access to learners and data that otherwise might not have been accessible. As my role in the present research was a teacher-researcher, it was possible for me to have in-depth information about the learners and the learning context, have access to different resources including students' mobile devices in and outside classroom, and examining closely what the formal and informal realities of the learning process. Such an opportunity was not possible in other research design studies where the researcher's role is more likely to be outsider rather than insider.

In addition, there was a need to provide new understanding and knowledge in regard to the use of tablet devices to supplement English language learning and teaching, and complement the university teaching syllabus before incorporating such technology into a course. To achieve such aims, the case study approach was used because it allowed a holistic analysis of data gathered from different sources in order to examine in depth the issue under investigation in its natural setting.

In the present study, data was collected using: questionnaires, focus group interview, think aloud protocol, student diaries and log file data as illustrated the following figure.

Figure 2: Timeline of Data Collection

Feburary 2014 (week 1 /day1) • BQ questionnaire	**Feburary 2014 (week 1 /day2)** • SILLG Questionnaire	**Feburary 2014 (week 3)** • SILLIP Questionnaire
Feburary 2014 (week1) - April 2014 (week 2) • Student Diaries (1 per week)	**Feburary -April 2014** • Log file data	**April 2014 (week 3 & 4)** • Think aloud protocol (1 per day with 9 students)
April 2014 (week 4) • SILLG & SILLIP Questionnaires	**May 2014 (week 1)** • Focus group interview (3 groups)	**December 2014** • Post study Interview
January 2015 • SILLG & SILLIP Questionnaires (sent via email)		

Despite the valuable information the researcher obtained from the large set of data collection instruments used in the present study, the researcher encountered the challenge of dealing with the participants' potential fatigue problem. The challenge encountered during the data collection process included the possibility of participants' feelings of discomfort, tiredness, and boredom. To address this issue, the researcher made the effort to improve the students' comfort level during data collection by: 1) Selecting appropriate time for completing the questionnaires (during break time). 2) Writing the diaries over the weekend. 3) Conducting the interviews and the think aloud protocol whenever convenient to students. 4) Choosing an appropriate location including a lab room or a member of staff's office where students would have more privacy and feel more comfortable. 5) Trying to involve students in an informal conversation before the research activity. 6) Encouraging students to participate in the research study, but informing them that taking part is voluntary. Throughout the research study, no evidence has been found of students' fatigue effects nor were there any comments from students in regard to this issue. However, there was one participant who decided to withdraw from the study because she could not manage to write a weekly diary nor to

allocate time for other research activities. Given that only one student out of the 21 participating in the study raised the issue of fatigue, it is assumed that none of the other students had this problem.

3.7 Research Setting

This research was carried out at the Community College at IABF University, Saudi Arabia. The institution consists of several colleges distributed across the eastern province such as Al-Jubail College, Al-Qatif College, Al- Dammam College for girls, and Al-Hafir College; along with the main University campus, which is located in Dammam and operated under the Ministry of Higher Education. Students join the university to enrol in different subjects such as health science including Medicine, Nursing, Dentistry and Applied Medical Sciences, Scientific sciences, Social sciences, Language sciences, Computer sciences, and Engineering. The university operates a segregated educational system in which girls study in separate campuses.

During their first year of study, students undergo intensive English language courses in which they are taught listening, reading, writing and speaking skills, in addition to English grammar and vocabulary. In the faculties of Medicine and Medical sciences, English is the main medium of instruction. However, Arabic is also used as a medium of instruction in other subject areas. In the Community College, both languages are used, though the use of Arabic is restricted.

As is the norm in Saudi classrooms, the class is controlled by the teacher, with the transmission of knowledge as the major concern, with little interaction between students and teachers. Indeed, Saudi students tend to not challenge teachers' views as this is considered a form of disobedience by the authorities.

3.8 Participants

The participants were a group of 21 undergraduate students majoring in Computer Sciences at the College of Community in IABF University, Saudi Arabia. All students were in their second semester of the first-year college and were taking the intensive English course in four hour sessions five days a week.

All participants were female Saudi students who were native speakers of Arabic. Their ages ranged from 19 to 25 years. Students were classified by the coordinator of the English department and by their teacher as beginners in English language proficiency.

The students' classification into groups was based on the English Department evaluation system. However, some students rated themselves as intermediate or advanced learners of English in the

self-reporting BQ questionnaire, which might be attributed to the number of years they studied English, which varied from six years to 12 years.

The linguistic competence of the students was assessed based on the scores derived from the results obtained during the first semester exams of their study at the English department prior to conducting this research. These exams usually prepared by teachers of the English department to test students on the language skills covered during the semester. The five language skills considered in order to determine the students' language proficiency are grammar, listening, speaking, reading, and writing.

The researcher considered the students to be false beginner learners because after years of studying English, they still had issues with in their speaking and listening skills. The participant students had problems with speaking skills in terms of accuracy, grammar, pronunciation, vocabulary, and fluency. They were not able to express their ideas even in simple language tasks.

3.8.1 Sampling

The quality of any research study can be determined not only upon its appropriateness of its methodological approach, but also on the selection of a sampling strategy appropriate to the aim of the research (Morrison, 1993). Investigating the entire population is not applicable in most studies and can be considered a 'waste of resources', hence, a researcher has to be careful in adopting the most appropriate sampling strategy especially with smaller number of participants (Dörnyei, 2007). Two main types of sampling strategy were identified by Bryman (2012): probability and non-probability sampling. While the former involves a random selection of participants where each unit of the population has equal chance to be selected. Thus, allowing of generalising the results of the study to the target population, the latter involves non-random selection of participants and aims at a representing a specific group (Bryman, ibid). As far as the present study is concerned, the aim was not to generalise from the research findings, the main aim was to find suitable participants who can provide a rich data set to allow investigation of the issues of concerns (Dörnyei, 2007).

Therefore, this study adopted the non-probability method in selecting the participants. Two techniques were used namely, convenience sampling and purposive sampling. The former refers to the method in selecting participants that the researcher is able to access, and the latter involves the researcher's intentional selection of the size and content of his/her sample (Bryman, ibid). On that basis, the group of participants (N=21) who took part in this study were identified as the most appropriate sample due to their availability and accessibility, English language proficiency level, and

age range. Selecting first year university students was done to increase the likelihood of participants' ability to use the mobile devices, which was confirmed later in the BQ (Background Questionnaire). The participants matched the target audience for this project because they were learners who 1) study in a segregated environment (2) need to maintain a high level of EFL proficiency after finishing the foundation course, (3) would appreciate learning on the move due to the limited time for in-class language study, (4) have been characterised as a passive consumer of knowledge due to their dependency on teachers.

All participants (N=21) took part in the research activities i.e. completing questionnaires, writing a weekly diary, monitoring their devices using the online tracker, and participating in the focus group interview. In regard to the selection of the participants for the think aloud protocol, for practical reasons, only nine students took part in the think aloud protocol. The selection of the participants was based on the purposive sampling technique in which the researcher's choice was based on two criteria: their performance during the course, and their willingness to participate in the study.

For the focus-group interviews, students were divided into three groups of seven. The number of participants in each group allowed each student to contribute to the discussion. As Litosseliti (2003) argued, the ideal size of a focus group is five to seven participants. Such a small group size, he added, can result in smooth interaction and detailed data.

3.9 Data Collection Instruments

One of the main concerns facing the design of this study was the question of how to identify autonomous language learning, and whether or not the researcher would be able to collect valid and reliable empirical data about learners' motivation and autonomous learning when mobile language learning is implemented. Assessing autonomy, as was discussed earlier, is a problematic procedure due to different issues identified in the literature (see section 2.6 Assessing Autonomy). Therefore, the methodology was designed to ensure the validity and reliability of the data.

3.9.1 Questionnaire

Questionnaire in Second Language Research

The questionnaire is a widely used instrument for data collection in second language research due to its efficiency and versatility (Dörnyei, 2003b). In fact, a questionnaire can be constructed easily and save the researcher's time, effort, and financial resources as it can be administered to a large number of participants and gather a great amount of information, which can be relatively easily analysed.

On the other hand, data derived from questionnaires are criticised for several reasons: 1) Superficiality of answers, which is related to the simplicity of the questionnaire's items especially with closed question which resulted in respondents selecting an answer from limited options. 2) Respondent bias, which may be 'acquiescence bias' or 'social desirability bias'. Both are associated with participants' tendency to agree with the questionnaire sentence in case of hesitation and uncertainty. 3) Self-deception i.e. respondents may deceive themselves by believing they do something that does not correspond to what they really do. 4) Halo effect, in which respondents tend to overgeneralise their responses. 5) Fatigue effects, where long questionnaires may result in inaccurate answers due to respondents' tiredness or boredom (Dörnyei, 2003b).

This study employed three questionnaires namely,

A) Background Questionnaire, developed by the researcher (BQ)
B) Strategy Inventory for Language Learning developed by Oxford (1990) \ Generic version (SILL)
C) Strategy Inventory for Language Learning developed by Oxford (1990) \ iPad Specific version (SILLIP)
Despite their limitations, the questionnaire data collection method was used in this study due to its efficiency in collecting descriptive data that is easily analysed (especially with closed questions). This was important because the researcher needed to collect background information of the students, such as demographic data and their usage of portable devices in general. It was necessary for me to have an idea about my students, in particular, their use of tablet devices and how they perceive language learning. Therefore, the questionnaire was believed to be the most useful instrument that can provide straightforward information in a short time. In addition, since I was new to my students, such information helped in determining the most appropriate way of incorporating the tablet device-based activities and to know what needs to be changed or modified.

In regard to my research agenda, the results of the SILLG and SILLIP questionnaires provided me with descriptive data about students' language learning strategies and motivation, which addressed the research questions. This was important because both questionnaires were administered at three points in time including twenty four weeks after the end of the study where face-to-face interaction was not applicable. Thus, the questionnaire was seen to be the most appropriate instrument to be use for that purpose.

Moreover, language learning strategies are processed mentally which makes it hard for the researcher to directly observe them. Thus, the questionnaire can provide an assessment of language learning strategy use as reported by students (Tseng et al, 2006).

The following section describes in detail the procedure undertaken to design, translate, and distribute the above-mentioned instruments.

Questionnaire Design
Background Questionnaire (BQ)

The researcher developed a questionnaire to be given to all participants to elicit initial information about my students, including English language proficiency level, demographic information (such as age), objectives in learning English language, portable device access and models, portable device usage to perform formal and informal activities, context of activities, students' usage of portable devices applications, and network accessibility. The design used a closed-question format with multiple-choice questions except for question (2) which was designed as an open question to ask about students' years of studying English language. Students were prompted to select more than one answer for items 6, 8, 10, 12, 13, 15, and 16 (see Appendix 1). The questionnaire included both multiple-choice questions and box ticking (yes, no) questions, and an open-ended question. The questionnaire was piloted (see section 3.13 Piloting) and translated into Arabic (see Questionnaire Translation). The questionnaire was administered at one point in time and was completed by all participants.

Strategy Inventory for Language Learning (SILL)

The Strategy Inventory for Language Learning version 7, which was developed by Oxford (1990), is one of the most commonly used instruments for assessing the frequency of language learning strategy use by EFL\ESL students (Oxford and Crokall, 1989; Oxford, 1996). It is composed of 50 statements related to language learning strategies with 5 point Likert scale of 'never' to 'always' true of me. The value of 5 indicates a very high frequency of strategy use (always) and the value of 1 indicates a very low frequency of strategy use (never). The questionnaire items cover six dimensions of language learning strategy type that consist of metacognitive, memory, cognitive, compensation, affective, and social. The questionnaire has been used by many researchers to examine students' strategy use across different tasks (Almutairi, 2008; Figura and Jarvis, 2007; Alharthi, 2011).

Although SILL has been widely used to measure EFL\ESL reported strategy use, several limitations have been identified by Oxford and Burry-Stock (1995). Firstly, the questionnaire focuses only on

the frequency of strategy use without describing the nature and the process of these strategies that students apply in response to different language tasks. This could cause students who report a high frequency of use of strategies but who use them in a less effective way to appear more strategic than those who report a low frequency of use of strategies in an effective manner. According to Tseng et al (2006), what is most important in learning strategy theory is how effectively the strategy is applied rather than how frequently. Secondly, Tseng et al (ibid) questioned the linear relationship between SILL individual items scores and the total scale scores due to the fact that SILL scale focuses mainly on specific strategic behaviour whereas the scale items indicate the frequencies of strategy use,

for example, one can be a good memory strategy user in general while scoring low on some of the items in the memory scale (e.g. acting out a new word or using flashcards) (ibid, p.83).

Although both quality and quantity of strategy use are equally important, SILL can help in providing information about the frequency of strategy use, and indicating the range of strategies used by students.

The original Strategy Inventory for Language Learning questionnaire consists of six dimensions: memory strategies, cognitive strategies, metacognitive strategies, compensation strategies, affective strategies, and social strategies. However, the researcher decided to focus only on certain strategies students were expected to employ when working with the iPad in and outside the classroom under the supervision of their teacher. In addition, the other means of data gathering would not be able to confirm or deny students' use of the excluded strategies.

Three types of language learning strategy were included within the scale, namely the metacognitive, the cognitive, and the social affective, which, as the researcher believes, can be applied in a Mobile Learning environment. Some items from Oxford's SILL were used in addition to other items developed by the researcher and based on mobile learning literature, her prior experience as a student, and an exploration of the capabilities of mobile devices when utilised in language learning tasks as it shown in the table below. A section was added to the scale to investigate students' motivation in language learning which the researcher also developed.

Table 3: Examples of SILLIP modified items

NO.	SILL item	SILLIP item
1	I read for pleasure in English	I read for pleasure in English on my iPad using apps like Newsy, iBook
2	I ask questions in English	I ask questions in English on my iPad using app like Ask3

The generic version of the SILL questionnaire (SILLG) consisted of 59 items, which were revised and reduced to 32 items (see Appendix 2). The SILLG was used as a pre, post, and delayed study questionnaire to collect data about students' strategy use, before beginning work with the iPad. Another parallel questionnaire (SILLIP) with slightly modified items was used as a midway, post, and delayed study questionnaire to explore students' strategy use when working on the iPad to perform a language task (see Appendix 3). Words like iPad, Internet, and names of certain Apps were added in order to account for more relevant language learning on the iPad.

Questionnaire Translation

Due to the low proficiency level of the participants, in order to ensure that they understand the questionnaire, the decision was taken to provide two versions of the questionnaires: English and Arabic. To ensure the equivalence of the English translated questionnaires, the researcher adapted Brislin's (1970, 1973) translation model. In his model, Brislin (ibid) introduced a technique by which translation-related problems can be eliminated. According to this model, one bilingual expert translates the original version from the source language to the target language. Then a back translation is applied by another bilingual expert who translates the text back into the source language, without having access to the original version, in order to avoid any influence or bias. The next step is to compare the two versions of the source language to look for any differences in wording, meaning, and linguistic variation and to eliminate any ambiguity or discrepancies.

Another technique that was used in this study to overcome problems encountered in the translation process was proposed by Birbili (2000) who recommends consultations and collaboration with others to identify the best terms to be used in the instruments after the comparison process.

In the present study, the three questionnaires (BQ, SILLG, and SILLIP) were translated into Arabic by a Ph.D. candidate, who had experience in working as a language translator (see Appendix 4). The main challenge of translating into Arabic was whether to translate, transliterate or keep the English form when no equivalent in Arabic language can be found. For example, the name of the Apps included in the SILLIP questionnaire (ASK3, Voice thread, Keynote); and some phrases such as mobile device, group work, language task. The decision was to keep the English wording in order to maintain accurate understanding by participants; and translate some terms which are commonly used in Arabic language.

The Arabic versions of the three questionnaires were then back translated by a bilingual Professor, who works in IABF University. The two English versions were then compared by a monolingual

English EFL teacher to look for any differences in English language wording, linguistic, and strategy terms. The monolingual teacher suggested keeping the original English version since the differences identified were in style rather than content. The same procedure was applied in translating all other instruments and forms used in this study, including: focus group interview questions, diary instructions, think aloud instructions, information and consent forms, and iPad acceptance policy letter.

Distributing the Questionnaires

After being granted permission from IABF to conduct the research study with a group of undergraduate Saudi students, a formal distribution of the three questionnaires was carried out in four stages.

In February 2014, a paper based BQ questionnaire was administered to 25 students. The purpose of the study along with the questionnaire requirements were explained to students in their native language. Students were given 30 minutes to complete the questionnaire. All questionnaires were given in two languages (Arabic and English) and the students were free to pick the preferred language version. The next day, the same procedure was carried out with the 25 students in order to complete the SILLG questionnaire.

At this stage, the students were encouraged to participate in the research study, but they were informed that taking part is voluntary. As a result, out of the 25 students who were enrolled in the class, only 21 decided to participate. Three of them changed college and one decided to withdraw from the study. The student who decided to not participate in the study remained in the class, but she did not take part in any of the research activities. The SILLG was administered again twelve weeks after the start of the study during their class time.

A similar procedure was used to administer the SILLIP questionnaire. The instrument was administered three times: three weeks after the start of the study, twelve weeks after the start of the study, and twenty four weeks after the end of the study. The researcher was present (except for the delayed questionnaires, which were submitted via email) to answer any questions raised by participants.

3.9.2 Focus Group Interview

Focus group interview are the collective experience of small group of participants (usually between 6-10) who are brought together to discuss an issue and thereby inspire, challenge, and react to each other views (Dörnyei, 2007). According to Kurger (1986, p.1) focus groups are '*organised group*

discussion which are focused around a single theme'. In the same vein, King (2004) considered focus groups a valuable source of data, which can yield insight into group and individual views by eliciting multi-level understanding of a particular theme and reflecting on their own experience at the same time.

One of the features that distinguishes focus group from other data collection instruments is its natural and spontaneous environment in which participants can engage in an open discussion without being restricted by certain rules (Litosseliti, 2003; Kruger, 1994). Therefore, the focus with such an instrument is on participants' interaction and dynamic, which can be triggered by a topic provided by the moderator.

Vaughn and his colleagues (1996) identified some of the merits in using focus group interview as a data collection method: 1) they are cost-effective as data can be obtained through group interaction in a short time. 2) interaction between participants can increase the quality of the data since one view of a participant can create multi-levels of discussion on the same topic. 3) focus group interview has a 'stimulative' nature in which shared understanding or diversity of views can be assessed by the researcher on the topic under investigation. 4) participants in focus group interview feel secure because their views are presented as a part of the whole discussion rather than a single opinion. On the other hand, some potential downsides of focus group interview stem from its requirements of a careful plan, preparation, and moderator skills in dealing with dominating and less active participants (Dörnyei, 2007). According to Morgan (1997), an unplanned focus group procedure can result in insufficient data. Another limitation is the difficulty the researcher would face in transcribing the data due to the number of participants involved in the discussion.

Focus group interview can be used either as a main data collection method to answer the research questions and generate a hypothesis; or in combination with other data instruments for the sake of triangulation and checking the validity of findings (Litoselliti, 2003). In this study, a focus group interview fulfilled both aims. Firstly, they were used as a main data collection method to assess students' views of the course. In particular, they allowed the researcher to gain insight into students' opinions on interaction with the course materials using the iPad. Students often hold different views about their learning process, thus, through group discussion, they would express their opinion about the different aspects related to the concept of learner autonomy that may be difficult to elicit from other data sources. To answer the research questions, it was important to gain information about the way students managed their learning, how they interpreted their role in the Mobile Assisted Language Learning course, how they interpreted the teacher's role in terms of enhancing their

autonomous learning, and how they perceived the new teaching and learning method. Secondly, data obtained from this instrument was used for the purpose of triangulation.

In May 2014, three groups of seven were interviewed at the Community college in a faculty member's office. Considering the students' tight timetable, university office availability, and the researcher's accessibility to the building, it was difficult to carry out the interviews in one day. Therefore, it was decided to set all interviews during break time, one every day over one week time. The time slot for each group ranged from 60 minutes to 80 minutes depending on students' involvement and interaction. Prior to the interview, the researcher designated a few minutes for informal talk with the students to reduce anxiety as for most of the students, it was their first experience in participating in an interview. As expected, students began to relax when they realised that there was no pressure to engage in such a procedure. Participants gave their permission via a signed consent form, and a full explanation of the procedure was given in a participant information sheet. The interviews were audiotaped to ensure accurate transcription and were performed in Arabic.

The focus group interview questions were designed to be semi-structured in order to keep the discussion more focused (see Appendix 7). Initially, questions items were designed in English and then back-translated to Arabic following Brislin's model.

A similar procedure was applied in conducting post study interviews twenty four weeks after the end of the course. Two groups of seven students were invited to talk about their English learning experience. Other interviews were carried out individually with three students via Skype because they had moved to another university at that time. The other participants could not participate in the interviews due to personal issues.

The twenty four week gap between the post study and the delayed interviews was determined for practical reasons. After twenty four weeks, the researcher was able to get permission from the Community College to interview the same participants. This was the first week of the 2015-2016 academic year, so it was more convenient for both the students and the teachers to allocate time for the interviews. In addition, it was difficult to get an outside study permission granted from Newcastle University and travel to the research setting during the academic year. Thus, the researcher planned her journey to allow the interviews to be conducted during the Christmas holiday, which was 24 weeks after the end of the study.

3.9.3 Think Aloud Protocol (TAP)

Think aloud protocol is an introspective research technique in which learners verbalise what is going on in their mind while performing a language task (Flower, 1981). In comparison with other sources of data such as interviews, observation, and diaries, TAP is the only instrument that can yield detailed information on how learners actually process the task and what language strategies they use in a real time process (Oxford and Burry Stock 1995). For Ericsson and Simon (1984), data obtained from TAP can be of great value and can be relied on if interpreted accurately with an understanding of the context under which it was obtained. However, some researchers (Dörnyei, 2007; Seliger, 1983, Oxford and Burry Stock 1995) argued that TAP had some limitations: data obtained from such an instrument retrieves information on the strategies used during the performance of the task at hand, hence, it cannot reflect the whole picture of strategies used in other tasks and by all students. Moreover, TAP can only be used on a one-to-one basis so can be a time consuming procedure. Additionally, learners' verbalisation of their inner thought is not a natural process since the procedure requires precise instructions and some tutorial sessions to prepare the learners on how to report useful data and the verbalisation process itself may influence the thought processes.

For this study, TAP was used to examine the type of strategies students employed when performing a language task using the iPad. In other words, the technique was effective in retrieving information about the occurrence of language strategies during a language task with the assistance of iPad device. It also might help in exploring the actual process of LLSs use when learning English in the new context of using the iPad as a learning tool. Such data can give a comprehensive picture of the language strategies used by the learners without being forced. Therefore, TAP was used to provide some evidence of learners taking control of their learning and the potential of the iPad device for enhancing autonomous learning. The data was also triangulated with other sources of data, namely questionnaires and online log file.

Think Aloud Protocol Procedure

For think aloud experts like Ericsson and Simon (1984) and Olson et al. (1984), training participants before the actual TAP session is important as such a procedure helps in familiarising participants with the aim of the study, show them what they are expected to do, and clarify any difficulties they might encounter during the session. In addition, Ericsson and Simon (ibid) suggested using a warm-up instruction task, just before the session, to help participants recall the requirements of the task and how it can be performed.

In the current study, the think aloud data collection procedure started with an invitation to nine students selected from the study participants. The TAP task was carried out over two weeks, one per day. On the appointment day, the purpose of the research and the think aloud protocol was demonstrated both in English and Arabic to make sure that students fully understood the requirements of the TAP task. Instructions included the type of task, the meaning of TAP, and the aim of the procedure. In addition, students were provided with written instructions in which the procedure of TAP was explained (see Appendix 8), and with an Internet-enabled iPad. In order to reduce the problem of students' limited ability to verbalise their thoughts while performing the language task, the researcher gave a short demonstration to present an example of what they have to do in the actual TAP procedure. The researcher answered a question that was different from the one students had to minimise the chance of imitation. It was also important to give students a clear idea about what they would perform, and to familiarise them to ensure that they got the idea of reporting their thought without explaining or justifying. However, training students was not practical due to the large sample size (nine students) and time constraints (the TAP procedure was performed during the exam period).

In the actual process, each student was given a 60-minute session to complete a language-learning task, which was similar in terms of the nature of the task and the content of the topic, to the ones they used to carry out during the course (see Appendix 9). In fact, the task was a part of their iBook Skills for Success, unit 9 section 6. Students were asked to complete the task and use the resources, as they would do normally. The choice of task was important because familiarity with the topic would increase the level of confidence and enhance students' performance. Another reason was that the task covered reading, listening, speaking, vocabulary, and some writing skills, which are the focus of the course. The structure of the task was open to the students, i.e. there were no cues to the right answer or any feedback. However, the researcher provided the students with prompts in which they were reminded to keep talking while carrying out the task. The activities were performed in Arabic to enable students to express their thought freely. Each student had a think-aloud session individually either in lab 61 or classroom 42, according to their availability. The TAP protocols were audiotaped for accurate transcription and analysis.

3.9.4 Student Diaries

In their review, Bailey and Ochsner (1983, p.189) defined diary study in second language learning as *'an account of a second language experience as recorded in a first-person journal'*. The diarist may be a language teacher or a language learner, but the central characteristic of the diary study is that they are

introspective: The diarist studies his/her own teaching or learning. Thus, he/she can report on *'affective factors, language learning strategies, and his own perceptions - facets of the language learning experience which are normally hidden or largely inaccessible to an external observer'* (ibid, p.189). According to this definition, diaries can serve as a means via which a researcher can capture particular aspects of the language learning experience, which are not possible in other data collection methods. Oxford and Crookall (1989) emphasised the value in using such a method to record students' thoughts, emotions, moods, achievements, problems, and strategies across different circumstances and situations in daily life. In the same vain, Dörnyei (2007) outlined several features that distinguish diaries from other instruments: 1) Diaries can provide an insider account of learners' own interpretation of their learning experience. 2) Diaries can provide a 'time- related evolution' data in which the same participant can report on events or evaluate their learning on different occasions. Such an instrument captures changes within individuals over a period of time. 3) Diaries can offer accurate self-report data since participants tend to report on the recent events that are more likely to be still in their short-term memory.

However, it is important to note here that diaries have some weaknesses as a data gathering instrument. One of the drawbacks in using diaries is their subjective nature since they entail free-form data produced by the learner him\herself; hence, the data produced would be based entirely on the learner's own perspectives (Oxford and Crookall, 1989; Baily, 1991). Another problem associated with diaries is the quality of learners' entries that can vary from being a 'thick description' to a 'sketchy report' in terms of the amount of details included. This can leave the reader with either a flat account of the learning event or an over-descriptive entry (Baily, ibid). In addition, keeping a diary on a regular basis can be a very demanding task that requires the learner's commitment and dedication.

Student Diary Procedure

Diaries have been categorised according to the time they have been recorded including 'interval-contingent', 'signal contingent -', and' event-contingent' design (Dörnyei, 2007). In the interval-contingent design, participants provide their diary at a regular specific time predetermined by the researcher. Event- contingent design, on the other hand, is based on a specific event, in which participants provide their diary whenever that certain event occurs. The signal- contingent design is different in its use of different devices such as mobile phone or pager via which the researcher can notify participant to provide their entries. In this study, the researcher adopted the 'interval' diary study category in which all participants were asked to submit a weekly diary subject to their agreement. The interval of one week was determined by the researcher because it corresponded to

the design of the course in which one new app was introduced to students every week that was used to solve the unit assignment. Besides, the interval dairy design served the purpose of investigating students' experience in using the tablet device for language learning via which the researcher was able to examine students' ongoing learning process. The researcher anticipated that this instrument would provide a rich picture of what students go through when they use the iPad for language learning, any challenges they encounter, the language learning strategies they choose and use during process of learning, and most importantly, the way they think and feel about the mobile assisted language course. Data obtained from this instrument was used to answer research questions.

In order to reduce some of the problems associated with student diaries, the researcher chose several ways to make the process as convenient to the participants as possible. Firstly, students were given written instructions in Arabic and English that describe in detail the requirements of the task (see Appendix 13). Students were offered further structure by providing some prompts and key questions to help them understand what to report on. Such prompts have proven to be effective in improving the quality of the reported data (Abraham and Vann, 1996). To make the process of writing diaries user-friendly, students were given the choice of writing in whatever format they were comfortable with, including paper-based diary, electronic diary using either word processing or the iPad apps, or by email. Students were also instructed to write in either Arabic or English at their own convenience. In doing so, the researcher tried to eliminate some of the problems associated with students' level of English, as most of participants were at beginner level. It was expected that this would increase their confidence and help them report their thoughts more accurately.

Diary submission for the first week ranged from a few lines to four pages. While some students wrote clear structured notes related to their experience using the iPad device for language learning, other students' notes were very brief and descriptive, lacking the reflective aspects that the researcher hoped for. The variety in the length and depth of diaries entries was attributed to some students being unclear about the purpose and the requirements of the activity. To overcome this problem, the researcher presented orally a good example of two students' diaries (names were anonymous) which helped in clarifying what was required from them. In addition, in the second week of the study, the researcher had a short session with all participants to make sure that students understood the task, and to answer their queries. Subsequently, more students carried out the task, in the following weeks that followed that session, than had initially been the case. Diaries became more detailed and an emergence of critical reflection was identified in most of students' diaries. By the end of the study

there were 170 entries, covering 33 hand written A4 pages, and 137 electronic diaries. The length of entries varied from five lines to four pages (see Appendix 14).

3.9.5 Online Tracker

In this study, efforts were made to increase the validity of the obtained data and to decrease the amount of self-reported data as well. One way to achieve this aim was by using online tracker software as a data collection instrument. The reason behind using such a methodology was to enable the researcher to collect data that reflected what students actually did and to compare that with their self-reported data. According to Robson (2002), self-reported data collection methods, when used as the only source of data collection instruments, cannot be relied on due to the difficulty of reconciling the results with other data showing what students believe or claim they do. Therefore, online tracker log-files were triangulated with other data sources in this study, in order to interpret the results with confidence.

The log file was created by a system monitoring software running in the background of the students' iPad device. The software automatically records accurate time-stamped events of how students utilise their iPads in formal and informal settings. Two systems were used in this study namely, the iKey monitor software package, and Meraki device management software. The former was the main monitoring software and has several features, including: recording all detailed keystrokes, tracking of all incoming and outgoing messages, recording all website activities, capturing screenshots in which a visual view about what students actually do is given.

The second software was the 'Meraki Device Management system', which was used to configure the students' iPad devices. Three features were found in the software that were not available in the 'iKey monitor' system. Firstly, the system logs the date and location of the used device. Secondly, Meraki was useful in enabling the researcher to manipulate the iPad features. For example, disabling the use of the camera and game centre inside the college campus, which was helpful in eliminating distractions in the classroom. Thirdly, the software provides information about the installed applications though it does not determine whether the applications were actually used. Participants were informed about the two applications and full explanations was provided orally and on their information sheet. A total of 4077 logs were received.

Concerns and Challenge

Installing the software on students' iPads required their informed consent. For ethical reasons, students were notified about the purposes and the reasons for using the online tracker. However, the

researcher was concerned about the possibility that students' activities may alter due to their awareness of the existence of the monitoring systems, or what is referred to as 'the observer paradox'. In social science research, 'observer paradox' refers to the concern about the presence of the observer which can be a system, artefacts, or a researcher which can influence participants' behaviour, hence, affect the results obtained (Dale and David, 2013). Another challenge was installing the 'iKey Monitor' software prior to the study. From February 2013 to December 2013, the researcher was looking for appropriate software to be installed on students' iPads. The process was time consuming due to the restrictions and regulations which Apple (the iPad manufacture company) applies when using such software. The monitor system iKey could not be installed unless the devices were jailbroken. However, this was not possible with the version of operating system of the iPad devices available on the market at the time of the study. Consequently, the researcher decided to eliminate the online tracker as a data collection method from the study since there was no way of overcoming this problem. Fortunately, in January 2014, a new jailbreak for the fourth-generation iPad device with the operating system IOS 7.1.2 was released. Hence, the devices were jailbroken, and the two programmes were installed.

3.10 Materials

3.10.1 iPad Devices

The project was self-funded, thus, all the iPads along with the preloaded Applications, the iBooks, and the online tracker software were purchased at the researcher's personal expense. In this study, a Wi-Fi enabled 16G iPad (4th generation) device was utilised. Several factors helped in the decision of purchasing the iPad in particular: it has a large multi-touch display screen (9.7 inch) which resembles the size of a textbook, lightweight, long battery life (about ten hours), built-in microphone and camera, built-in APP (Applications) Store which enables learners to access a wide range of educational applications (around 20.000 out of 275.000 APPs) and, a page layout which can be altered from portrait to landscape, virtual on-screen keyboard and a single control button (see section 2.13).

The above-mentioned features of the iPad device made it the most appropriate portable device for the project main aim of enhancing autonomous language learning by incorporating the use of tablet device into the language course.

Procedure

Permissions were granted from the Dean of Higher Education, the Dean of Preparatory year, the Dean of Community College, the Head of English Department, and the Coordinator of Preparatory year to use the iPads for English learning for a group of students; however, due to university regulations students were not allowed to use the camera inside the college campus. On the 1st of February 2014, each participant received an iPad to use for academic learning. A letter of acceptance was given to students in which iPad device parameters were explained in both Arabic and English (see Appendix 20). The letter explained in detail how students were permitted to use the iPad inside and outside the classroom. For ethical reasons, each iPad was allocated a number that helped the researcher to identify each iPad when using the online tracker without revealing the user's identity. Students were also warned about the danger to privacy and how they have to be cautious when navigating the web on their device.

3.10.2 Application (App) list

Selecting the right application is an essential component of any successful mobile-assisted learning project (Demski and Jennifer, 2011). Therefore, the researcher was very careful in choosing the list of applications to be used in the course. Each iPad was preloaded with a list of educational applications that are academic in nature. Other built-in Apps were also integrated into the course including Safari, Calendar, Camera, Notes, iBook, Mail, Newsstand, and Reminders. Most of these Apps were free to download from the Apps store and were easy to use. The decision to include these particular Apps was based on the researcher's review, which was conducted prior to the study in order to identify the most sufficiently appropriate Apps to be used by students.

 For example, the researcher reviewed Apps like Gotomeeting, Skype, Joinme, Vsee, and Fuzebox, in order to look for an electronic conferencing App to be integrated into the course. The process of choosing a conferencing application for the course was aligned with the research aims, and the curriculum goals and objectives of the English Language Intensive Course. The conferencing application was included because it meets the course objective of providing students with enough practice of speaking and listening skills. To be precise, the App was intended to be used with the students to prepare a 15-minute presentation based on a topic of their choice by setting up online group meetings, where they could receive feedback from their teachers and peers as well as plan and organise their presentation. Participating in such an activity was expected to help some reluctant students to be involved in a group discussion and practise their learning autonomously. Thus, the

Fuze box App serves as a mediating learning tool by which students can practise their speaking and listening skills, and get some degree of support and encouragement from their peers.

Besides, integrating such an App into the course is relevant to one of the aims of the present study, which is to tackle a number of teaching and learning issues such as time and space constraints by facilitating students' communication outside the classroom. After spending one week trying out the above mentioned Apps, it was decided to choose Fuze box as the most effective online conference application.

The review applied certain criteria when selecting the conferencing App which includes: First, an easy user-experience in which students are allowed to schedule, join, or set up a meeting on any mobile device simply by sending an invitation link via email. Second, screen sharing, file sharing, and note sharing in which students are able to show their tablet screen to other students in the meeting, create a slide or write a note that other students can edit; and share picture, video, and audio files. Such criterion enables the replication of the traditional face-to-face meeting in the classroom where students can share and edit notes or a presentation. Third, recording, the App makes meeting recordings available for download. This learning option is suitable for different situations where students are unable to join the meeting. In addition, saving the recorded meeting and sending a link to the teacher is helpful in monitoring the learning activity. Table 3 shows the list of Apps that were installed on students' devices, divided into categories.

Table 4: List of Installed Apps and their Categories

Application	Cost	Category
Ask3	Free	Podcast & Feedback
VoiceThread	Monthly subscription	Podcast & Feedback
Ted Talk	Free	Practise Listening
Newsy for iPad	Free	Practise Listening & Reading
Speaking Pal	Free	Practise Speaking
Grammar i6E Lite	Free	Practise grammar
iDo NotePad	Free	Note Taking
iStudiez Pro	Free	Revision & Planning
Khan Academy	Free	Practise Listening
Dictionary.com	Free	Online Dictionary
Dropbox	Free	File sharing
Pages	£ 6.99	Word processor
Keynote	£ 6.99	Presentation
Nearpod	Free	Podcast & collaboration
iAnnotate	£ 6.99	Annotation
My Secret Diary	Free	Electronic Diary
QuickVoice	Free	Voice recorder
Prezi	Free	Presentation
Flashcards	Free	Flash cards/ Vocabulary learning
StudyBlue	Free	Flash cards/ Vocabulary learning
gFlash	Free	Flash cards/ Vocabulary learning
iTune U	Free	Course Management
Oxford Learner's Bookshelf	Free	e-books for courses

3.10.3 E-Book (Electronic Book)

The e-book used in this study was the electronic version of Q Skills for Success/Listening and Speaking, which was preselected by the English Department in IABF University to be used as the textbook in the preparatory year. Students can select the book from a virtual bookshelf, provided by Oxford University Press (OUP), by entering an access code. However, this book title was not available on Oxford's bookshelf app at the time of the study, and could be purchased only by authorised teachers. To counter this problem, the researcher contacted OUP to facilitate the process, who in return expressed great interest in the current project and agreed to sell 26 access codes of their e-book to be used as part of this study (see Appendix 16, Appendix 15, and Appendix 16).

The e-book was created by OUP from scratch and was designed to replicate the look and feel of a traditional paper book but with add-to features to make it more interactive (see Appendix 17). The book includes features like virtual sticky notes, instant definitions, highlighting, short clips of audio and videos, the ability to save a page and email it, an in-built voice recorder that enables students to practise listening, and the ability to manipulate the size of the text. The appearance and interface of the book is designed to be user-friendly in order to reduce the learning curves usually associated with new technology.

3.10.4 iTune U Course

The iTune U is a course management system that was used in the project to supplement the course materials, organise students' assignments, and interact with students outside the classroom. The interface of the iTunes U app resembled the look and layout of the e-book in which students can navigate from one page to another (as in the e-book). Touching the Catalogue button in the upper right takes students to the library button through which students can open their course. The researcher designed the course to provide supplementary materials like Apps tutorials, unit assignments, vocabulary lists for different units covered within the course, videos used for brainstorming, grammar worksheets, and recommended graded books titles. In addition, students can view the course overview, read about the teacher, look at the course outline, and view the course requirements. Students can also access different posts, documents and presentations uploaded by their instructor (see Appendix 18). The main feature that distinguishes the iTune U from other course management system apps is the ability for students to access their course without network connection requirement. Thus, once students download course content, they have complete control and are able to use it however they want. They can choose to learn at their own pace, and decide the location and time of their learning.

Procedure

On the first day of the second semester February 2014, students were introduced to the course by explaining the aim of the study and the requirements of the course. There were asked to take the participant information sheet along with the consent letter to read it at their own pace and decided whether to join the project or not.

On day 2, all students (including those who did not want to participate in the project) were allocated an iPad device. The teacher-researcher allowed time at the beginning of the first session for questions and answered students' enquiries.

The class included 25 students who were then reduced to 21 students in week 3. The sessions were held in classroom 46 in the campus of Community College. The classroom was equipped with technology components such as a projector, smartboard, and a PC with a high-speed internet connection. Students were instructed to work individually, in pairs, or in groups of four depending on the activity they were processing. Therefore, the students' chairs were organised in circles to allow physical movement.

The class ran for two consecutive hours every day for 10 weeks (no teaching took place in the last two weeks of the study). As for outside class learning, students were expected to spend 5-10 hours every week to revising, practising, and learning what was covered in previous sessions. In addition, a weekly two-hour workshop session was held every Tuesday during activity hours. The workshop was designed to guide the students on how to get the most of their device for language learning; to set up different accounts for different apps, and to answer any technical questions. The session also included demonstrations of different Apps used during the course.

In regard to the course design, it was planned to provide students with the content needed to enhance their learning through a combination of face-to-face and online modes. All in-class activities were drawn from the OUP textbook including listening, speaking, grammar, and vocabulary learning. During the lesson, students would listen to the teacher's explanation, take notes, participate in group discussions, complete exercises, and practise listening and speaking. As for the outside-class study component, the teacher-researcher assigned weekly homework to engage students in interactive listening, practise spontaneous speech, and involve the students in debate and discussions.

Assignments were either topic-specific related to the unit covered during the week, or a free choice topic selected by students. The latter was used to give students a level of freedom of choice. For example, students were required to set up an online group meeting where they could exchange their views, share and negotiate their understanding, and receive feedback from both their teacher and their peers. Another example was the podcast assignment in which students were instructed to record a short podcast based on a preselected topic and then uploaded it to the Voice Thread app platform. Students watched the podcast at their convenience and then participated in a text-based discussion of the issues related to it. Teacher feedback was also enabled through a teacher's account platform by which the teacher was able to monitor the group discussion.

3.10.5 Other Practicalities

The design of mobile-assisted language learning activities should be similar to the design of any other activities, based on specific criteria and driven by a specific framework. In this study, using the iPad was not the main objective in the study; rather it was the means by which students were able to counter the restrictions of time and location; to perform activities that were otherwise not possible, and to enhance their autonomous language learning. This was done by designing the course with Naismith and Corlett's (2006) five critical success factors in mind. Naismith and Corlett's (ibid) draw their factors from different research papers from the International MLearn Conference series 2002-2005. The following table shows the five factors, and how they were interpreted in this study.

Table 5: Naismith and Corlett's (2006) Factors and their Application in the Current Study

Factor	Description	Application
Access to technology	Mobile technology should be available to the learners where and when needed	Students were provided with an iPad device to be used in the classroom and to be taken home and use it on the move
Ownership	Learners should either own the device or treat it as his\her own	Each student in the study was allocated an iPad device free of charge.
Connectivity	Availability of internet connection whether through wireless LAN or over mobile network	The project incorporated a wireless high-speed network connection to enable students to access different learning resources, surf the web and link with their peers across context. In addition, based on BQ findings, most students had wireless network connection at home as well.
Integration	Integrating mobile learning project into the curriculum	In this project, the mobile learning activities did not stand apart, they were integrated with the preparatory course curriculum and students' daily life. The textbook syllabus was extended to include activities performed on the iPad device outside the classroom.
Institutional Support	The need for technical support and staff training	This project was carried out with the assistance of IT department in Community college. Two of the IT staff were available in case of any technical support or maintenance needed. The project did not need staff training since the study involved one group, which was taught by the teacher-researcher. In addition, as mentioned before, students' enquiries regarding the use of the device along with any technical problems were addressed in the weekly workshop session.

Since the use of mobile devices in learning and in particular language learning in Saudi Arabia is a new phenomenon, the above mentioned factors played a crucial role in guiding the design of the mobile-assisted language learning project.

3.11. Quantitative Data Analysis Procedure

The data obtained from the BQ, SILLG, and SILLIP were analysed statistically through SPSS software (Statistical Package for Social Sciences) and were exposed to different statistical procedures.

The data obtained from the items in the BQ were analysed to measure the percentage of students' responses to the various questions raised in the questionnaire. A profile was then developed to provide general information about participants in the present study such as demographic data and their usage of mobile devices. The questionnaire helped in alerting the researcher to any difficulties that might occur during the course especially in relation to technical issues students might have in dealing with the new course. In other words, the information obtained from the questionnaire helped in pinpointing some of the issues related to the use of the tablet devices in and out the classroom, which might require more attention from the researcher.

The modified Strategy Inventory for Language Learning questionnaires (SILLG and SILLIP) were analysed to compare the frequency differences between language learning strategy use at three points

in time. The questionnaires consist of 32 statements about strategy use, which cover three strategy categories: metacognitive, cognitive, and social using at 5 point Likert scale of 'never' to 'always' true of me.

High usage   3.5-5.0
Medium usage   2.5-3.4
Low usage   1.0- 2.4

In order to classify the frequency of strategy use and interpret the mean score of each independent strategy item, the researcher followed Oxford's (1990) scale ranges:

3.11.1 Nonparametric Tests

The nonparametric procedures were used for analysing items measures on the ordinal scale i.e. students' responses to the SILLG and SILLIP questionnaires in relation to their reported LLSs use and motivation. For this purpose, the following statistical tests were used.

A Friedman and Wilcoxon Tests

The Friedman test is a nonparametric equivalent to the repeated measure ANOVA. In order to investigate the effect of using the iPad as a learning support tool on students' language learning strategies mean scores, in a twelve-week teacher guided course, the SILLG questionnaire was administered to students at three separate time points (pre, post, and delayed). Similarly, the SILLIP questionnaire was administered (midway, post, and delayed). The findings were analysed using a Friedman test to examine any significant differences in the overall mean scores of the scale items under the three conditions: learning English without the support of the iPad device, learning English with the support of the iPad device along with the teacher's guidance, learning English with the support of the iPad device without the teacher's guidance. It was also used to measure if there were any significant differences in students' response in terms of their motivation at three points in time.

In addition, findings from the SILLG and SILLIP questionnaires were statistically analysed using a Wilcoxon test. The Wilcoxon test was run with the three pairs of comparisons in the SILLG and SILLIP data due to a limitation of the Friedman test, which does not pinpoint exactly where the significant change occurs. In other words, while the Friedman test may find a statistically significant change amongst three conditions, the Wilcoxon test can be used as a follow up test to determine where the specific change occurs. The test allows the same sample to be measured in terms of their response to the two questionnaires on two different occasions, which allows comparison of LLSs frequency use and motivation as reported in the SILLG and SILLIP.

3.12 Qualitative Data Analysis Procedure

3.12.1 Think Aloud Protocol

Transcribing

One of the most effective ways to represent the oral production of data is to transcribe it in full. This can aid the researcher in examining and analysing the transcript closely. According to Ericsson and Simon (1993), such an approach may eliminate some of the issues associated with 'soft' data i.e. the audio recording tapes, as it allows for a clear and easy analysis through coding.

In the current study, students gave verbal reports on the language learning processes that they were experiencing during a language task. Accordingly, nine audio tapes were transcribed verbatim. Recording times range from 25- 57 minutes with an average of 40 minutes per tape. Transcription conventions were used to ensure that the script was as accurate as possible, but no attempt was made to indicate students' tone of voice or stress. Intonation, pace, and non-linguistic speech (such as laughing and muttering) were included roughly where they add or indicate a meaning to the protocol. The protocols were translated literally in which the main structure of the Arabic sentence was kept. In order to distinguish Arabic from the English, transcription conventions adapted and modified from Smargorinsky (1994) were used. For instance, Arabic wording of a sentence was indicated by printing within forward slashes (/…/). In addition, in an attempt to differentiate between what was written and what was oral, curly brackets ({…}) were used for words being written down as they were verbalised, whereas cap brackets (^…^) were used to indicate text being read by students. For more conventions that were used in transcribing the audio recording tapes, please refer to Appendix 10.

Coding

Once the audio tapes were transcribed (see Appendix 11), the researcher started to analyse the data adopting O'Malley and Chamot's (1990) definitions as the base upon which each strategy item from the scripts of TAP was identified (see Appendix 6). The process of coding the data was time consuming because it required listening to the audio tapes several times to identify students' strategies. This was followed by sessions of reading the transcriptions 'line by line' to determine what may be considered 'strategy-like' expressions. Each thought unit then obtained from the TAP was coded according to type, i.e. cognitive, metacognitive, and social strategy, and category within each type, i.e. self-monitoring, applying world knowledge, etc.

Following the segmentation process, the occurrence of each strategy item from TAP was tallied by entering each strategy item in SPSS for statistical calculation. The raw total of all strategies, and each strategy type, was calculated. Data processing provided the number of occurrences of each strategy type and category, the number of students who used each strategy, and the ranking of strategy use. Such a procedure yielded a figure indicating the frequency use of each particular strategy in relation to the other sets of strategies in the TAP.

A further qualitative analysis of the data was carried out in order to interpret students' use of strategies when interacting with the learning task. The qualitative analysis of TAP presented in this study focuses mainly on the strategies reported by students that were applied to the language task with the support of the iPad device.

3.12.2 Student Diaries and Focus Group Interview Analysis

An inductive thematic analysis was carried out on the data obtained from student diaries and focus group interview. According to Graneheim and Lundman (2004), employing such analysis allows the interpretation of meaning from the content of qualitative data. Indeed, it serves as a useful tool through which a researcher can go beyond statistics toward the subjective interpretation of data. This involves a process of systematic classification, including coding, grouping, and identifying themes within the data set (Hseih and Shannon, 2005). In this analysis, my aim was to gain a deeper understanding of the phenomena at hand that is students' autonomy in a mobile language learning environment. With an open-minded approach, the data analysis involved two stages of analysis: mechanical and interpretative. The former refers to a process in which the researcher organised, categorised, and coded data into themes whereas the latter concerned determining which themes were relevant to the research questions. Braun and Clarke (2006, p.82), explaining what can be considered a theme, state '*a theme captures something important about the data in relation to the research question, and represents some level of patterned responses or meaning within the data set*'. Therefore, extracting themes in the present study relied on coding extracts and sentences that referred to learning strategies, collaboration and interdependence, students' motivation, controlled practice, difficulties encountered in the course, and any instances of learners' autonomy. It also included identification of any emergent themes or significant ideas that had relevance to the overall objectives of the study.

Coding

Table 9: Thematic Analysis Adapted from Braun and Clarke's (2006) Six-Phase Approach

Phase Approach	Description
Familiarisation with the data	In this stage, student' entries data was read several times to highlight and mark any interesting phrases, sentences, or extracts that were of relevance to the research questions. This helped immerse myself into the depth and breadth of the data. Some initial comments and general notes were written in the margins.
Generating initial codes	This was a close inspection of the data, in which systematic comparison of the data items was carried out. At this point, the highlighted material was organised and labelled with meaningful terms (known in Nvivo as child nodes).
Searching for themes	Connections between identified patterns, across the entire data set, were examined in order to generate a small number of themes. In other words, all categories (child nodes) relevant to one topic were either merged into one potential theme (known in Nvivo as parent nodes) or separated into sub-themes. In the case of one code not fitting into any such theme, it was labelled 'miscellaneous'. Using the Nvivo programme aided the organisation of the large amount of data and enabled more systematic classification of the emergent codes.
Reviewing themes	Once coded and classified into initial themes, the extracts were then evaluated for a second time. All generated themes were revised and re-examined to ensure that they functioned in relation to the initial coded extracts. This process resulted in some themes being redefined or discarded.
Defining and naming themes	In order to define and name, each theme was examined and checked against coded extracts. At this point, all extracts under one theme were re-read with the purpose of ensuring the theme captured the information within those sections of the data.
Producing the report	The final stage in thematic analysis was my own personal interpretation of the data. Each identified theme within the entire data set is presented in detail, supported by examples from students' diaries.

The first step in analysing students' diaries was preparation of the data, achieved by transforming all electronic and handwritten diaries into Microsoft Word before translating the 70 entries into English. As for the focus group interview, the taped interviews were transcribed in order to prepare for the analysis stage. The second step was coding the data using the qualitative data analysis program Nvivo 10, which helped manipulate the texts and create codes (known in Nvivo as nodes). The thematic analysis was based on Braun and Clarke's (2006) six-phase approach as explained in the following table.

Validation of the coding

An attempt was made to enhance the validity of the coding of both student diaries and focus group interview data. I asked one of my colleagues with expertise to read through the data and review my coded themes. Due to the daunting nature of such a task, it was decided to randomly choose 50% of each data set to be analysed separately by my colleague. According to Burnard (1991), such a process can help in maintaining the validity of the data and making sense of it. The themes generated by my colleague were compared with my own themes to look for any differences or similarities in the

identifications of the themes. After several sessions, an agreement was reached to merge the two analyses as they were found to be very similar.

In addition, the triangulation of introspective data with other data collection methods, and using some methods more than once (interviews) has allowed for a complete picture of the process of the study and for the study themes to be looked at from different angles.

As for the think aloud protocol data, in order to ensure the validity of the coding, two validation procedures were carried out. Firstly, a 'two-pass approach' proposed by Michelene (2009). In this procedure, the data is coded twice by the researcher in order to confirm the initial categorisation of strategies and help in ensuring that each unit of thought in the protocol is well articulated (ibid). Thus, the nine protocols were coded for strategies by the researcher herself, and then left for about three weeks without looking at them. A second time coding was carried out by the researcher in order to compare coding attempts and identify any similarities or differences. The first resulted in identifying 496 units of strategies for all nine TAPs while the second identified 524 units of strategies classified similarly to the first coding.

Secondly, an independent coder coded two samples of the protocols in order to ensure that it could be applied consistently to the data. The coder, who teaches English as a second language, was asked to validate the preliminary identification of the unit of strategies in the TAP. The researcher introduced the coding scheme and the list of strategies coded by her to her colleague in order to answer any questions raised. Then, she was given a list of instructions in which she was asked to identify whether she agreed or disagreed with the identification of strategies and to comment on the units she disagreed with (see Appendix 12). Out of the 191 strategy units, the independent coder disagreed with the researcher on 31 strategy items and agreed on 160 items.

Most of the coding differences between the independent coder and the researcher were related to either failure to apply any of the categories in the table of definition to a given strategy unit, or ambiguity in some interpretation of some thought units, i.e. a strategy item that can be interpreted in two ways. Such divergence in the coding process is to be expected since the coding of TAP is a complex and demanding task. The first issue was solved by excluding these items and the latter was dealt with by including one item under two categories.

For example, the unit '/ now I will read…not everything… only the head titles…it makes it easier to write…/' was interpreted as direct attention strategy, elimination strategy, and getting the gist of

reading texts/skimming strategy. Therefore, it was decided to include it under the three strategy categories.

After that, second coder was asked to code the rest of the protocols (six TAPs) in which a strong agreement between the two coding was achieved.

3.12.3 Log File Analysis

The log files were created by two monitoring systems (the iKey monitor software package, and the Meraki device management software) running in the background of students' iPad devices. The software automatically records accurate time-stamped events of how students utilise their iPads in formal and informal settings. Despite the different types of data obtained from these two types of software, the decision was made to focus mainly on the screenshots captured by the iKey monitor and the lists of installed applications provided by the Meraki management system. Such data was useful in verifying students' use of the device for language learning whether inside or outside classroom and in triangulating students' self-reported data gathered through interviews and diaries.

To collect the log file, two options were provided by the iKey Monitor software: the first option was to access recorded data by logging into the interface of the iKey Monitor on every individual device and save screenshots as an image. In order to check the log file and any other data physical access to the students' devices would therefore be required, i.e. meeting individual students in the university and sending saved images to my email. It was clear that this option was not feasible as not only would the process be time-consuming but also highly inconvenient to arrange during school hours. The alternative approach would have been to take the devices home and carry out the same process. Yet this would have posed similar problems and in fact, the students needed their devices to prepare for the exams as it was exam time period. The most suitable option provided by the iKey monitor software at the time of the study was therefore to send the logs to my email address. However, due to the email attachment size restrictions set by the email service provider, a maximum of twenty screenshots for every individual device could be sent per email. Another issue was the difficulty in identifying students' screenshots as the only information available was the date and time of the screenshot but not from the individual it originated from.

Despite such challenges, 4077 screenshots were collected from the student iPad devices over a 12-week period. Again, analysing this amount of data was an extremely time consuming process. Thus, the decision was made to sample the online tracker data by choosing data from week 1, week 4 and

week 8 (as the last two weeks were in the exam period and no teaching had taken place). Log file data helped in determining the date and time of student activity as shown in the figure below.

Figure 3: A sample screenshot produced by the iKey Monitor Software
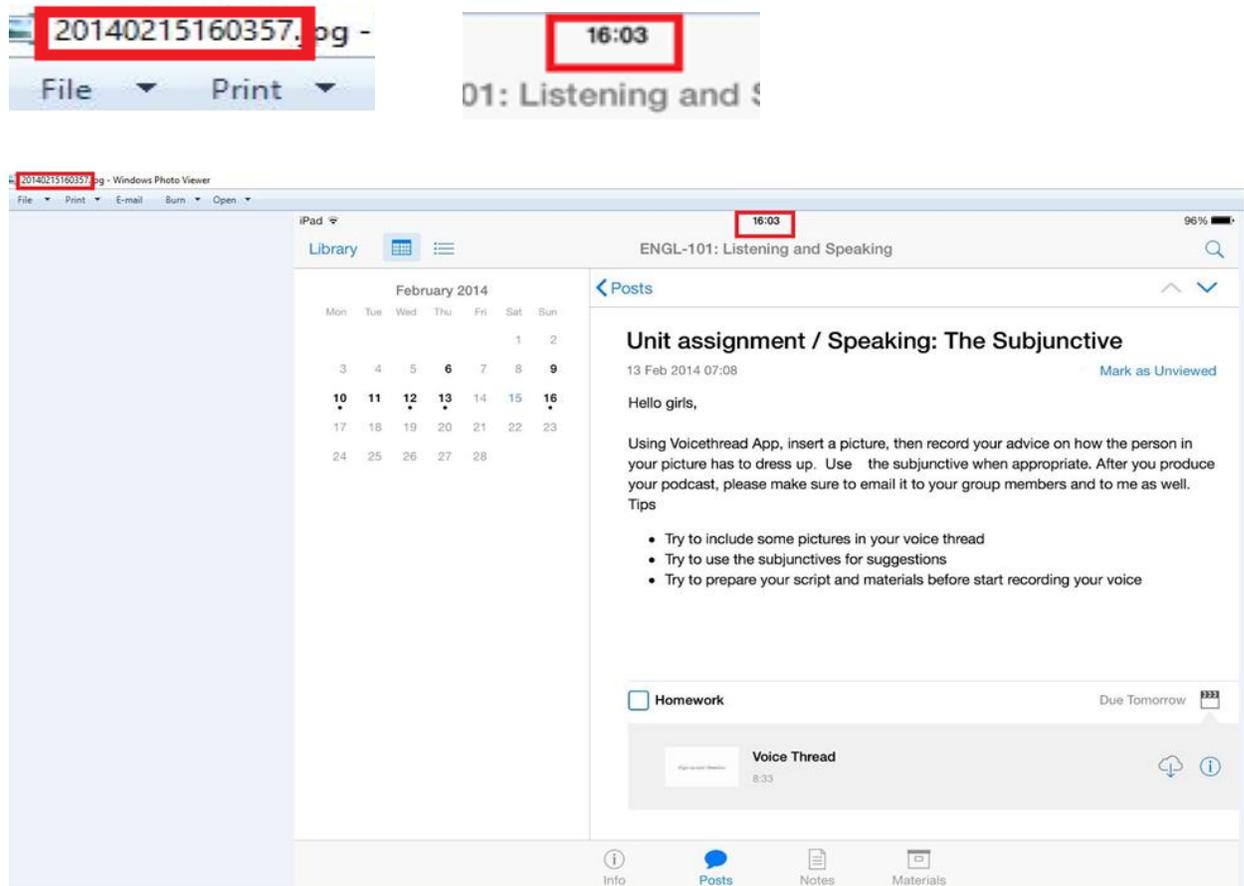
As seen in Figure 3, the first part of the file name was comprised of the date 20140215 and the second part showed the time 160357. This helped determine whether activity took place in or outside the classroom, and whether there was continuity in student learning over time. In addition, the screenshots were analysed manually by the researcher by viewing every screenshot and interpreting the type of activity that had taken place (though there were a number screenshots with no activity because the screenshots were taken automatically at fixed intervals. Thus, sometimes it only captured the screensaver of the iPad). Such a process was achieved by filling in a form (see Appendix 19) including the date, time, application, purpose, and researcher notes. This provided an insight into the students' language learning activity as mediated by the iPad device.

3.13 Piloting

In any research study, it is essential to carry out a pilot study to the research instruments and check procedures, which helps in validating the research instruments, modifying, and finalising them for the research, revealing faults and limitations in the instruments, and giving indication of the time required to complete the questionnaires.

3.13.1 Piloting Questionnaires
Exploratory Piloting phase

The first pilot study was carried out with three international students to see if the questionnaires (The English version of BQ, SILLG, and SILLIP) items were understandable for participants and to ascertain the time needed to complete each questionnaire. With the presence of the researcher, each participant was asked to go through items and provide feedback on any ambiguity and confusion regarding the wording and style of the questionnaire. They were also encouraged to suggest any improvements. The results indicated that the three questionnaires were well comprehended by participants, though some modifications were needed to improve the design of the scales, these included:

• In BQ, participants were confused by question 8 because each mobile device can have a different answer in relation to questions 9 and 10. Changes were made to the formatting of the three questions (8, 9, and 10) by combining the three together.

• In SILLG, participants were unsure about the meaning of 'flashcards' in item 12, and the phrase 'in control of my own learning' in item 25 in SILLIP. Therefore, a definition of 'flashcards' was added, and explanation to the phrase 'in control of my own learning' with an example was given to item 25.

• In both SILLG and SILLIP, participants found it difficult to rate the statements in section D with expressions used in the other sections of the scale. Therefore, changes were made to section D by substituting the heading of the 5 point Likert scale layout with other expressions like strongly agree, agree, not sure, disagree, and strongly disagree. This format was more appropriate to this section since the question items investigated students' motivation in regard to their language learning.

The length of time required to complete the questionnaires was between 15-20 minutes for each questionnaire. This was an acceptable duration and in line with Dörnyei's (2003b) proposition that questionnaire completion should not exceed a thirty-minute period.

Second Piloting Phase

The second pilot study was conducted for three reasons: to identify any problems with the instruments such as ambiguity or confusion; to record the time needed to complete the questionnaire when administered to a larger group, and to check the internal reliability of the instruments. The modified instruments were piloted again with a larger group who were similar to the targeted population. The three questionnaires, BQ, SILLG, and SILLIP were sent via email to 50 first year undergraduate female Saudi students. In the email, the researcher gave instructions on how to answer the questions, asked them to provide the time taken to complete each questionnaire, to comment on any ambiguity in the style and formatting of the instruments, and to record any problems they may encounter.

Thirty-eight responses were received. The second pilot study resulted in no amendments. The instruments were found understandable and participants did not report any problems in answering the scale items. The time taken to complete each questionnaire ranged from 10 to 30 minutes.

Third Piloting Phase

Based on the feedback and recommendations received from the piloted respondents, the revised instruments were forward and backward translated into Arabic (Please refer to questionnaire translation). Near-final translated versions of the three instruments were piloted with a representative group. For practical reasons, the instruments were piloted with only twenty female Saudi students. Participants reported that the three instruments were easy to answer and understand. Time taken to complete each questionnaire was 20-30 minutes on average while the time the researcher needed to introduce the research study and give instructions on how to complete the questionnaires took approximately 15 minutes.

3.13.2 Piloting the Online Tracker

Piloting the online tracker i.e. the two tracking systems used in the study: the iKey monitor and the Meraki device management software, was aimed at checking that all the apps (including the course manager and the iBook) were working properly, and at checking the sort of information such a tracker can provide. Therefore, eight students were given an iPad preloaded with all apps. The tracker provided the researcher with information such as web history, keystroke, screen captures (interval of 30 minutes), installed apps, location of the devices, and the time the device was used. However, such information was accessible only when the device was connected to the Internet.

3.14 Validity and Reliability

Validity and reliability are two main issues, which a researcher has to take into account when designing, analysing, and evaluating a research study without which any findings will be regarded as unusable (Patton, 2002). Validity refers to the capability of an instrument to measure what is intended to be measured (Cooper and Schindler, 2001). To examine the validity of a research study, different procedures have been proposed including: content validity, internal validity, and external validity. (Yin, 2009; Cohen et al., 2011; Bryman, 2012). Content validity refers to the extent to which elements within a research instrument, such as a questionnaire or a test, measure what they are supposed to measure (Mackey and Gass, 2005). For example, whether or not the choice of questions is a reasonable reflection of the range of content of, for instance, a language course or in the case of the current study the range of strategies being investigated. Internal validity is to do with the findings of the study and whether such findings are the result of the research measure (Wellington, 2000); whereas the external validity is mainly concerned with the generalisation. Brawn and Rodgers (2002, p. 294) defined it as *'the degree to which the results of a study can be accurately interpreted and effectively generalised'*. Reliability, on the other hand, refers to the consistency of the study results, which is divided into internal and external reliability. While the former refers to the consistency of the results when analysed by an independent researcher, the latter refers to likelihood of replicating the same study and obtaining consistent results (Brawn and Roger, ibid).

However, external/internal validity and external reliability were not relevant due to the nature of the present study. In other words, generalisability of the results to other contexts was difficult due to the small number of the participants. Likewise, maintaining consistent results if the study were replicated would be difficult to achieve due to the highly subjective nature of the study which means external reliability cannot be ensured

Nevertheless, to ensure validity and reliability, content validity and internal reliability were established for the quantitative part of the present study, and the qualitative part, on the other hand, was validated using an alternative technique relevant to naturalistic inquiry, that is, trustworthiness. The concept of trustworthiness refers to the value of the research findings which can be achieved by applying a set of methodological processes which are used as a more appropriate indicator of its quality (Bryman, 2012), as will explained in the following sections.

3.14.1 Content Validity

Content validity refers to the extent to which elements within a research instrument, such as a questionnaire or a test, measure what they are supposed to measure (Mackey and Gass, 2005). One

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way to check the content validity of a research measure is to ask experts in the field and get their feedback of whether the measure elements are relevant and representative to the concept that they are used for to measure. In the present research, content validity was used to assess the content of the three questionnaires SILLG, SILLIP, and BQ and the categorisation of LLS for SILLG and SILLIP.

Validation of the Questionnaires

In comparison with other data collection methods such as think aloud protocol, interviews, and student diaries, SILL proved to be effective in terms of gathering a quantity of data, if not quality data. According to the many researchers around the word who have employed SILL in their studies, SILL is seen as 'an instrument' that is useful 'in real-world settings for making decisions relevant to people's lives' (Oxford and Burry-Stock, 1995, p.6). In other words, the use of SILL in classroom settings has allowed researchers, for example, to explore the relationship between learner's performance, frequency and range of strategy use, and to compare the difference between perceived strategy use before and after an intervention (strategy training). Using Cronbach alpha as a measure of internal consistency, SILL has been shown to have a high reliability (ibid). In fact, SILL is claimed to be highly reliable, which makes it a trusted measure for gauging students' perceived strategy use (Bremner, 1998; Oxford and Burry Stock, 1995; Park, 1997; Sheory, 1999; Wharnton, 2000; Leung, 2011; Almutairi, 2008). In terms of validity, SILL has been tested for content validity, as was reported by Oxford (1986), two strategy experts i.e. an independent language expert and a teacher of Spanish, matched the SILL items against strategy items in the Taxonomy of Second Language Learning Strategies, which was built based on an extensive review of empirical second language strategy research.

To check the content validity of the newly constructed instrument BQ and the revised versions of SILL (SILLG, SILLIP), two Ph.D. students in Educational and Applied Linguistics who have a good knowledge of the educational system in Saudi, and the researcher's two supervisors took part in this procedure. The expert panel's remit was to check whether each item in the questionnaire has a logical link with the concept of autonomy and language learning strategies, to determine whether or not each questionnaire item was appropriate to the educational level of the participants, and to review the three instruments for question bias. The referees verified the appropriateness of the scales to the theoretical framework of autonomous language learning and suggested several changes as illustrated in the following table.

Table 6: Changes suggested by the expert panel for the three questionnaires SILLG, SILLIP, and BQ

No.	The change	How?
1	Delete duplicated items	With regard to the SILLG and the SILLIP questionnaires, it was recommended some items should be removed because their ideas were duplicated in other items. For example, items 8, 13, 14, 20, 47, 48, 50, and 58 were all deleted to avoid redundancy. For example, the three items: 'I read articles or stories in English for pleasure using Apps like Newsy or e-book', 'I use iBook App on the iPad to read on my free time', and 'I read articles and stories on my iPad' were found similar in terms of meaning and strategy type. Therefore, it was agreed to modify the sentence and combine the meaning in one sentence 'I read for pleasure in English on my iPad using apps like Newsy, iBook'.
2	Eliminate unnecessary information	Some items were felt to be irrelevant to the dimensions of language learning strategies. Several of these were therefore removed, including 7, 9, 12, 17, 19, 25, 28, 29, 35, 36, 37, 38, 41, 43, 45, 49, and 51.
3	Group some items which refer to the same category of language strategy	The grouping of some items that corresponded to the same strategy category was advised in order to eliminate any confusion on the part of the participants. Therefore, items 1, 2, 3, 6, 10, and 11 were moved from section A to section B; item 18 was moved from section B to section A while item 15 was moved from section B to section C. As for items 30, 31, 32, 33, and 34, they were moved from section C to section A. Lastly; items 40 and 59 were moved from section D to section C.
4	Add information	The panel suggested adding information to some of the question statements in SILLIP scale so as to increase clarity. This was applied to item 24 in which an example of an online activity was given and the phrase 'having an online conference in English using the Fuze meeting App on the iPad' was added. Similarly, item 33 was clarified by adding the phrase 'by reading the instructions on the iTunes course App'. Items 22 and 21 were merged for clarification purposes.

In light of these changes, the scale items were reduced to 32 from 59 for SILLIP and to 32 from 60 for SILLG.

The following table illustrates the amendments in the subscale quantities before and after the validation process.

Table 7: Items of the SILLG questionnaires in the validation stage

Section	Dimensions	Pre-validation	Post-validation
A	Cognitive	20	11
B	Metacognitive	15	7
C	Social	16	6
D	Motivation	9	8
Total items		60	32

Table 8: Items of the SILLIP scales in the validation stage

Section	Dimensions	Pre-validation	Post-validation
A	Cognitive	15	11
B	Metacognitive	20	7
C	Social	15	6
D	Motivation	9	8
Total items:		59	32

In regard to the BQ, the reviewers verified the wording and style as appropriate to the respondents' level and certainly suitable to obtain the required information this instrument was intent to have. However, it was recommended that item 1 be simplified by adding a tick box in order for participants to choose from two age categories.

Validation of Categorization of Language Learning Strategies for SILLG and SILLIP

The monolingual English teacher was asked to validate the categorisation of each dimension into cognitive, metacognitive, and social strategy. In order to identify each strategy item as either cognitive, metacognitive, or social, the researcher developed a table which illustrates the sources of the questionnaire items, i.e. Oxford's (1990) original items, modified items (highlighted), and items developed by the researcher; and asked the reviewer to categorise each item and add comments whenever applicable (see Appendix 5).

The procedure was performed by following O'Malley and Chamot's (1990) definitions of these three dimensions. This procedure was challenging because for some items it was difficult to distinguish between strategy types as one item could be said to fall under more than one category. For example, item 3 'I use grammar games apps on the iPad to improve my grammar skill' can be a metacognitive strategy (rehearsing linguistic component) and can come under the cognitive strategy as a practising strategy.

To solve this issue, the three coding were compared with the coding originally identified by the researcher to establish how similar and different the categorisations were. After several discussions, two decisions were made: 1) A classification was made if it was identified by all or the majority of coders.2) The strategy item was excluded when agreement could not be reached.

3.14.2 Internal Reliability

Internal reliability is a procedure applied in quantitative research, which refers to the ability of an instrument to consistently measure attributes and produce consistent findings using the same instrument with the same respondents and under the same conditions. In order to estimate the consistency of the two questionnaires, the researcher applied a Cronbach alpha coefficient test using questionnaires returned by a sample of thirty-eight Saudi undergraduate students. The internal reliability of any scale is considered high when the value of the Alpha coefficient is high (values range from 0 to 1). In fact, the liability coefficient of a scale should exceed 0.60 to ensure that items of each dimension have high coherence as Dörnyei (2007) stated '*we should aim for a reliability coefficient in excess of 0.70, if Cronbach alpha of a scale does not reach 0.60, this should sound warning bells*' (p. 207).

The reliability coefficient of Oxford's SILL ranged from 0.89 to 0.98 in different research studies (Bremner, 1998; Oxford and Burry Stock, 1995; Park, 1997, Sheory; 1999, Wharnton, 2000; Leung, 2011; Almutairi, 2008). As for this study, the Cronbach alpha coefficient for the SILLG was 0.915 while the coefficient for the SILLIP was 0.925, which is considered a high reliability ratio. The subscale reliabilities were also tested using the same reliability test and the value of each strategy group was over 0.60 in SILLG and over 0.70. in SILLIP. The following table shows the reliability statistics of the scale and each dimension as well.

The following table shows the reliability statistics of the scale and each dimension as well.

Table 9: Reliability statistics for the SILLG Dimensions

Questionnaire Sections	Section A	Section B	Section C	Section D	Overall
Cronbach's Alpha	0.863	0.772	0.679	0.934	0.915

Table 10: Reliability statistics for the SILLIP Dimensions

Questionnaire Sections	Section A	Section B	Section C	Section D	Overall
Cronbach's Alpha	0.867	0.791	0.766	0.935	0.925

3.14.3 Trustworthiness of this study

The criteria used to judge the quality of the present study was guided by the interpretivist paradigm in which the use of research instruments with established metrics about validity and reliability was not relevant. The quality of the present research (the qualitative part) was therefore evaluated in light of the concept of trustworthiness. The purpose of trustworthiness is to support the qualitative researchers' argument that the inquiry's findings are credible, transferable, dependable, and confirmable (Lincoln and Guba, 1985). An important aspect of interpretivist research, thus, is to establish these four elements, which are described in more detail below.

Credibility

In order for qualitative research study to be credible, the researcher has to ensure that the data obtained is true and accurate. Credibility in a conventional study is parallel to internal validity but can be accounted for by using several techniques suggested by Lincoln and Guba (1985), which includes triangulation, peer debriefing, member checking, and persistent observation. For triangulation, data was collected via questionnaires, focus group interview, learner diary, think aloud protocol, and online log file in order to counterbalance the limitation of using one method and draw conclusions from different angles. Triangulation also helped in revealing any convergence among the different

sources of data by cross-checking and comparison between qualitative and quantitative data. Such a technique was useful in minimising the subjectivity of the qualitative data and strengthen the results of the study.

Another technique used by the researcher was peer debriefing, a process involving an independent professional who analyses, reviews, and checks the findings. In this study, an attempt was made to enhance the validity of the coding of both student diaries and focus group interview data. I asked one of my colleagues with expertise to read through the data and review my coded themes. The themes generated by my colleague were compared with my own themes to look for any differences or similarities in the identifications of the themes (for more information see section 3.12.2 Student Diaries and Focus Group Interview Analysis). In addition, to establish credibility of the research, a pilot study was carried out (see section 3.13 Piloting)

Transferability

Transferability is equivalent to external validity in quantitative studies. While the former refers to the extent to which the findings can be transferred/generalised to similar contexts or groups, the latter refers to the degree to which the results can be generalised to other contexts or populations. Despite being similar, external validity and transferability are not the same. According to Lincoln and Guba (1985), external validity is a concept associated with quantitative research studies, and is difficult to achieve in a naturalistic inquiry especially if the aim is to generalise the results to a wider population or settings. Thus, the main aim in quantitative studies, which attempt to achieve external validity, is to make inferences about how the same results can be achieved in different contexts or with different population based on the results of a study. Such a goal is not possible in qualitative research because contexts and people can change over time (ibid). However, it is possible to transfer/generalise individual experience of a group of participants or a single context to a similar population or context when the researcher provides a thorough description of the research context, aims, assumptions and methods. Other researchers can then decide the extent to which the results of that study are applicable, hence, transferrable to their own

To achieve transferability of qualitative data, a researcher has to provide a full, detailed description of the data that can be used by other researchers interested in transferability (Lincoln and Guba, 1985; Merriam, 1998). In the present study, transferability was achieved through providing a thick description of the context and background of the study to identify any similarities of the present study context and other contexts. This can help the reader to make a judgement as to whether the study findings can be generalised or not. Additionally, a detailed description of the study design and

its implementation, data collection, data analysis procedure and data interpretation were provided to avoid subjective claims of the findings.

Furthermore, theoretical transferability is also applicable, since the findings of the present study excluded the contextual application of the sociocultural theory, hence, the theory can be transferred to similar issues, research questions, and situation regardless of the research specific context characteristics.

Dependability and Confirmability

The technique used to assess the reliability of the qualitative data is dependability, which is refers to the consistency of the findings. According to Lincoln and Guba (1985) there is a close relationship between credibility and dependability as the demonstration of the former ensures the establishment of the latter. Thus, assuring the credibility in the present research, using the above mentioned techniques, establishes dependability of the study.

Confirmability, on the other hand, is associated with the neutrality of the findings. In other word, for research data to be confirmable, the researcher's personal interests and biases should not interfere with the conduct of the research (Bryman, 2012). Confirmability of qualitative data was achieved through providing in-depth coverage of the findings: 1) data from focus group interview and think aloud protocol was audio recorded which allowed for accurate transcription 2) data from the think aloud protocol, the focus group interview, and learners diary was transcribed and checked for accuracy which helped in re-examining data throughout the study.3) translated data was checked for accuracy following Brislin's (1970, 1973) translation model (see section 3.9.1).

3.15 Role of the Researcher

Bogdan and Biklen (2006) argued that the researchers' identity, beliefs and personal experiences cannot be separated from the research undertaken. In other words, my role as a teacher-researcher in this study cannot avoid some level of subjectivity; especially when interacting with students to collect different sources of data, and mainly in carrying out the focus group interview and think aloud protocol. Indeed, I could not eliminate my influence on students when taking into account the length of the study and the time spent with students. In addition, certain attitudes or beliefs may have affected my judgment. Similarly, students' responses to several data collection instruments might be influenced by my role. Therefore, throughout this study I tried to minimise the level of subjectivity by employing different techniques to ensure that the research follows research good conduct.

3.16 Ethical Issues

Newcastle University ethical guidelines were adhered to. Participants were asked to participate in the study on a voluntary basis and they were assured that withdrawal from the study would not affect their marks in any way. Prior to the study, they were provided with a Participant Information Form (see Appendix 21) in which an outline of the study procedure was given. Furthermore, the researcher explained the aims, procedure and nature of the study to them. Signed consent (see Appendix 22) was obtained from participants to obtain their agreement and willingness to participate. Confidentiality and privacy was ensured throughout this study: participants' identities were anonymous, students' names used in qualitative date results chapter are all pseudonyms i.e. names have been changed after they have been embedded within a text. Participants also were assured that the information would be kept confidential and the data would be destroyed after obtaining the required information for the completion of the research. They were also provided with the researcher's, and supervisors' contact details in case they need any clarification or further information.

3.17 Summary

In this chapter, I have described the design and methodology used in the present research study. The first section introduced the interpretive research paradigm and constructivist epistemological approach along with the qualitative and quantitative continuum and the mixed method as well. The case study strategy that was selected as the main methodological research techniques for the current study was described. To answer the research questions, the second section focused on the multi-method data collection instruments, which were divided into: the quantitative study which provided a description of the design, translation process, and the procedure of the three questionnaires used in the study. The third part addressed the qualitative data collection and described the different instruments used in this stage, namely the focus group interview, the student diaries, the online tracker, and the think aloud protocol. The section also included an outline of the materials used in the study, including the iPad device, the e-book, and the iTune course. The chapter also describes the procedure undertaken in analysing the quantitative and qualitative data. Finally, the chapter ended with a discussion of the validity and reliability measures in this case study, the ethical standards and how they were approached with a discussion of the researcher's role and ways to enhance objectivity in the study.

Chapter 4: Presentation and Analysis of the Quantitative Data

4.1 Introduction

The aim of this chapter is to present the quantitative data from this case study on Saudi students' autonomy in their approach to learning English as a Foreign Language. The chapter reports the quantitative data analysis of the Background Questionnaire (BQ), the generic version of the Strategy Inventory for Language Learning questionnaire (SILLG), and the iPad Specific version of the Strategy Inventory for Language Learning questionnaire (SILLIP) administered to undergraduate students at the Community College, IABF University, Saudi Arabia. The BQ questionnaire was used to collect background information on the students, such as demographic data and their usage of portable devices in general, whereas the SILLG and SILLIP questionnaires were used to collect data about students' language learning strategies and motivation as reported by them. Such information can be triangulated with the narrative of the qualitative dataset in order to build a more complete picture of students' experience with the learning of English via the iPad device.

The chapter reports the findings of the BQ in order to give information about the students' profile. It also presents the frequency of the LLSs use at three points in time according to the central tendency measurement of SILLG and SILLIP. The two questionnaires SILLG and SILLIP were distributed to students at the same three intervals to ensure that answering two different but similar questionnaires will not affect students' answers. In other words, when both questionnaires are completed at the same week, students' reported use of LLSs in general should resemble their reported use of LLSs when the iPad device is used. Thus, the increase in students' reported LLSs use via the use of the iPad device would result in an increase in LLSs in general i.e. in SILLG. Friedman's ANOVA and the Wilcoxon tests were used to examine any differences in students' use of LLSs. The descriptive statistics will be presented first, and then the statistical significance of the data will be discussed later in the chapter. Finally, results of part D of the SILLG and SILLIP questionnaires, which concerns with students' motivation towards English language learning inside and outside the classroom, will be presented.

4.2 Background Questionnaire (BQ) Results

The background questionnaire (BQ) was administered to students on the first day of the course in order to collect students' demographic information (such as age), proficiency level of English language, objectives in learning English, access to mobile devices, use of mobile devices for learning,

context of activities, students' usage of applications on mobile devices, and Internet access (see Appendix 1).

All students completed the questionnaire and most of them were aged between 18 and 25 years with only one student aged between 25 and 30 years. Information about students' English language learning was sought in questions 2 to 6 of the questionnaire. The majority of students (80%) had studied English for 8-9 years. The remaining students reported that they studied English for twelve years or six years.

The second question was about students' self-rating of their English proficiency level. The reason for including such a question was to collect information about students' perceived language level. Since the only information available about students' language level was that provided by the English department who classified them as beginner learners, the researcher was interested to see whether the students would evaluate themselves in the same way. The results indicated that (30%) of students rated themselves as a low proficiency level learner compared to (10%) who rated themselves as a lower advanced proficiency level. The rest claimed to be intermediate (30%) to lower intermediate (35%). However, my impression, as a teacher of the course, was that only one student can be regarded as being at advanced proficiency level learner which suggests that some students might either underestimate or overestimate their language proficiency.

Nineteen students out of twenty one considered being 'proficient in English' as very important. Respondents learn English for the following reasons as shown in the table below.

Table 11: Reasons for Learning English Language

Why are you learning English?	Respondents	Percentage
Interested in the language	15	22
Interested in the culture	9	13
Required to take a language course	11	16
To get a better job	16	23
To travel	12	17
Other	5	7

In questions 6 and 8, students were asked whether they had used any mobile device before and if they have internet access at home. All students answered that they had used a mobile device before the course, and were able to access the internet at home.

Question 8 asked about the type of mobile devices they were using, the frequency with which they used mobile devices, and whether the students used them inside or outside the classroom. The results indicated that laptops and mobile phones were the top two mobile devices used by students.

85% of the students owned a laptop, which they used on a weekly basis outside the classroom while the mobile phone was owned by 95% of students, and was used outside the classroom by 66% of students and inside the classroom by 34% of students both on daily basis. Use of the iPads was reported by only seven students out of twenty-one either on a daily or weekly basis outside the classroom. The proportion of students who had an iPad was 38% whilst 23% of students reported owning other kinds of mobile devices. PDAs did not seem to be used by any student in the present study.

When asked about technology use, students reported using their mobile devices in different activities as shown in the figure below.

Figure 4: Which of the following do you know how to do?
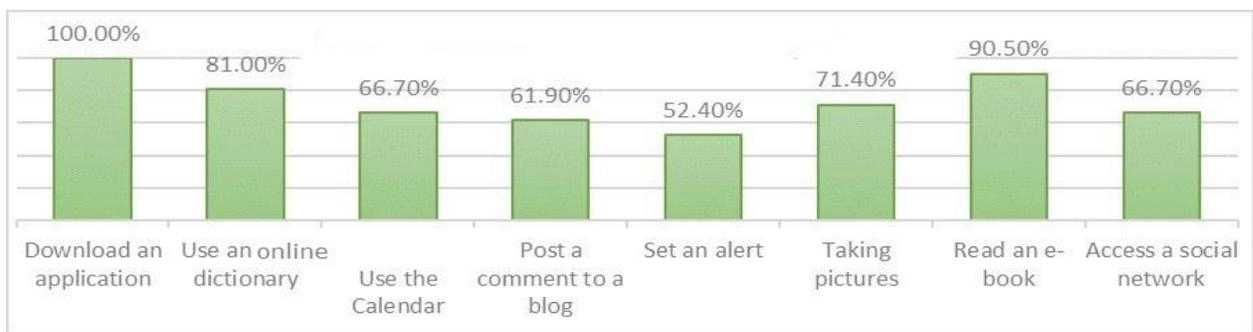
In relation to these results, it was clear to the teacher-researcher during the course that most of the students were familiar with performing tasks that are easily accessible on their portable devices such as using online dictionary, and sending emails but not tasks that that may require a higher level of expertise in using technology such as posting comments to a blog.

While the students all claimed to use their mobile devices outside the classroom, none of them reported using them inside the classroom. Based on my experience as a teacher in the current study, this is almost certainly because students were not allowed to use any mobile devices with a camera inside the classroom. In response to question 15, students used several applications outside the classroom as shown below.

Figure 5: What applications do you use outside the classroom
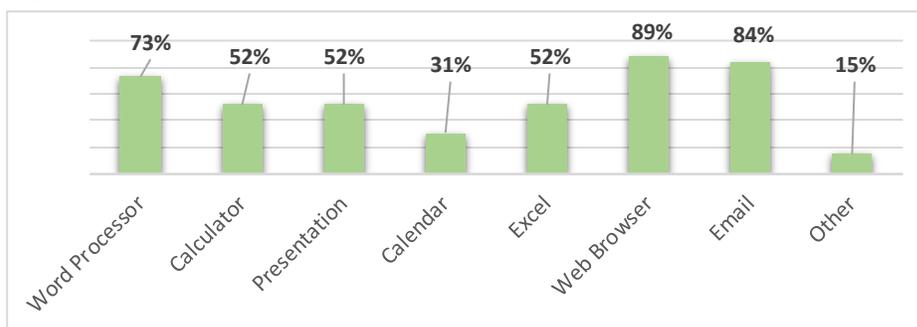
The last question in the BQ yielded information about the type of activities students did when they used the portable devices outside the classroom.

Figure 6: Why do you use your mobile device outside the classroom?
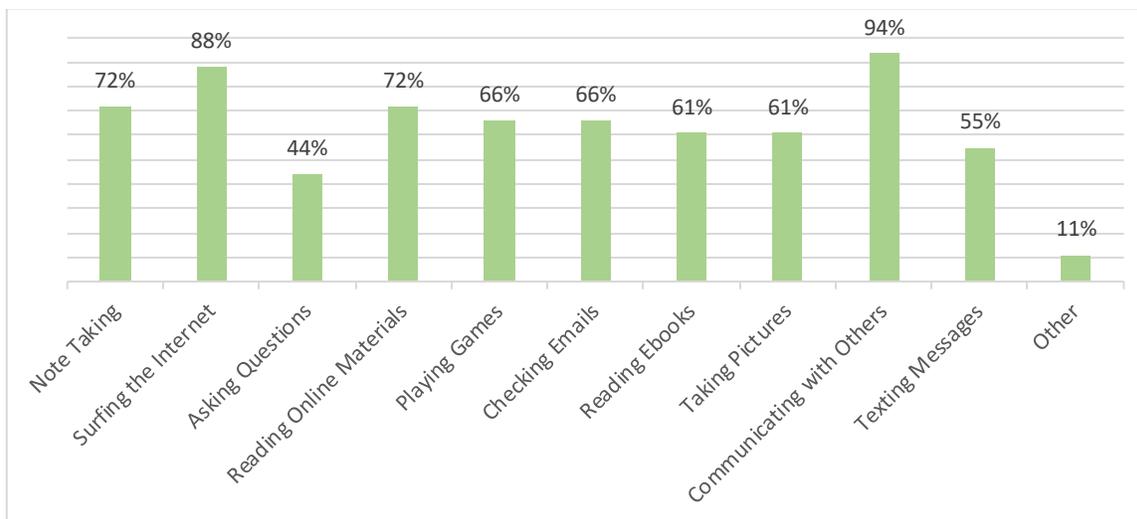
The most reported activity was communicating with others while the least reported activity was asking questions which suggests a contradiction in students' responses because asking questions is considered to be one form of communication. Another explanation of such a result can attribute to students' interpretation of the question.

4.3 What language learning strategies do students appear to use during the course and how do these change as the course progresses?

The Strategy Inventory for Language Learning questionnaire (SILL) developed by Oxford (1990) was adapted and translated by the researcher. Two versions of SILL questionnaire were produced by the researchers namely SILLG and SILLIP, which were used to collect descriptive data about students' learning language in relation to research question 1. The section presents the results of the students' responses in terms of means, standard deviations, and patterns from both the SILLG and SILLIP questionnaires. The findings are presented in tables, and based on the descriptive analysis of the three strategies types: metacognitive, cognitive, and social strategies.

4.3.1 Results from SILLG

This section reports the results of the SILLG questionnaire conducted pre study, post study (twelve weeks after the start of the study), and delayed (twenty four weeks after the end of the study). The

study conducted over twelve weeks period though the duration of the course (the teaching) was ten weeks.

Table 12: Descriptive statistics for the three SILLG sub-scales at three points in time

Questionnaire	Strategy Category	Mean	Std. Deviation
Pre	Metacognitive	3.2	.70058
	Cognitive	3.2	.86872
	Social	3.3	.64498
Overall Mean		**3.2**	
Post	Metacognitive	3.7	.64561
	Cognitive	3.7	.57718
	Social	3.5	.46926
Overall Mean		**3.6**	
Delayed	Metacognitive	3.9	.56618
	Cognitive	3.8	.57521
	Social	3.8	.29147
Overall Mean		**3.9**	

As the results in table 12 show, the overall average mean score of the three categories of LLSs pre study was 3.2, which can be considered a medium usage. The three groups of strategies were used by all students, with almost the same mean score. With regard to each specific strategy item, table 30 (see Appendix 23) indicates that the most frequently reported strategy was the metacognitive strategy 'thinking about the progress in English language'. Learners also reported the least frequently used strategies M= 2.0, the cognitive strategies 'using flash cards'.

As the questionnaire data is based on self-report, some students may report something they do not actually do. For example, students claimed that they ask other proficient students to correct them M= 3.2, check their answers with other students M=3.8, and work in groups M=3.6; but they do not practise English with others very often M=2.1. This indicates that either students misinterpreted the meaning of practicing English, or they underestimated the use of some strategies.

About twelve weeks after the start of the study, the questionnaire was given again to the same sample to collect information about their use of LLSs. The statistical analysis of the SILLG post study shows an increase in the overall mean scores of each individual strategy with metacognitive and cognitive strategies as the most used M=3.7 followed by the social M=3.5 strategies.

Further analysis indicated that there was a high level of claimed use by learners of the learning strategies on SILLG, with mean scores ranging from 4.6 to 3.5 including six of metacognitive strategies, five cognitive and four social strategies. In general, following the categories suggested by Oxford (1990), the results suggested that students were high frequency strategy users with an overall

mean score of 3.6. Indeed, no strategy item scored a mean of less than 2.7, which is defined as a medium frequency usage (see table 31, Appendix 23).

Twenty four weeks after the end of the study, students were asked to report on their strategy use by completing the SILLG questionnaire for the third time (Delayed). The reason for administering the same questionnaire three times was to examine whether or not students would persist in using the LLSs even after the end of the course. Such findings can provide evidence for the existence of a pattern of increasing strategy frequency use in language learning, and can be indicative of a continuing awareness of LLSs.

In general, the results indicated an increase in the overall mean score M=3.9 which is thought to reflect a high use of strategies. Concerning each specific group of strategies, the ranking order has changed in which the most frequently reported strategy use was the metacognitive followed by the cognitive and then the social strategies; compared to the results of post study questionnaire where the most frequently reported strategy use was the cognitive and the metacognitive and then the social strategies as can be seen in the following table.

Table 13: Descriptive statistics for SILLG post and SILLG delayed

SILLG/Post Questionnaire	Mean	SILLG/Delayed Questionnaire	Mean
Metacognitive	3.7	Metacognitive	3.9
Cognitive	3.7	Cognitive	3.8
Social	3.5	Social	3.8

Table 32 (see Appendix 23) summarises the descriptive findings obtained from SILLG on the range of LLSs reported by learners. As noticed from the results, students were consistent in their last choice in regard to the specific strategy items during three points in time. The least frequently used strategy was 'using calendar and flash cards'.

4.3.2 Results from SILLIP

This section reports the results of the SILLIP questionnaire conducted midway through the study (three weeks after the start of the study), post study (twelve weeks after the start of the study), and delayed (twenty four weeks after the end of the study).

Table 14: Descriptive statistics for the three SILLIP sub-scales at three points in time

Questionnaire	Strategy Category	Mean	Std. Deviation
Midway through the study	Metacognitive	3.6	.67512
	Cognitive	3.3	.58802
	Social	3.4	.60265
Overall Mean		**3.5**	
Post	Metacognitive	3.8	.80778
	Cognitive	3.6	.61705
	Social	3.5	.61575
Overall Mean		**3.7**	
Delayed	Metacognitive	4.0	.66261
	Cognitive	3.9	.55464
	Social	3.8	.45940
Overall Mean		**3.9**	

As can be seen from the table above, there was a slight difference among the mean of each strategy that Saudi students claimed to have used midway through the study with a mean score of M= 3.6 for the metacognitive strategies, M= 3.3 for the cognitive; and M=3.4 for the Social strategies. In general, the level of use of LLSs among learners was high with an overall mean score of 3.5 out of a possible 5.0.

According to the mean scores of each individual strategy item, only one metacognitive strategy came under the category of low frequency use with a mean score of 2.3 'I use the calendar app on the iPad to develop a weekly schedule for language learning'. The second least frequently used strategy was 'I use flashcards apps on the iPad' with a mean score of 2.6 (see Table 33, Appendix 23). The same results were obtained from the SILLG questionnaire, which appears to indicate that after three weeks of using the iPad as a supporting language-learning tool, the participants did not tend to use the flashcards very often. The most frequently reported strategy was 'I think about my progress in Learning English' which was also reported as most frequently used by students in the SILLG results.

Twelve weeks after the start of the study, the SILLIP questionnaire was administered to the learners again to collect information on their LLSs when the iPad device was introduced in a teacher-guided EFL course. In general, the overall mean score of the three strategy categories use has increased from 3.5 to 3.7. Comparing the midway and the post SILLIP mean score of each category, the mean scores for cognitive strategies increased from 3.3 to 3.6. The mean score for metacognitive strategies increased from 3.6 to 3.8 while the level of claimed usage of social strategies increased slightly from 3.4 to 3.5.

Table 34 (see Appendix 23) lists the least frequently and most frequently used strategies by learners twelve weeks after the start of the study; among which there are two strategies with mean score of 4.5 both belong to the metacognitive category ' trying to find ways to use the iPad device to practise English 'and 'trying to notice the language errors' , and only one low usage strategy item with a mean score of 2.1 'using calendar'. It can be noticed that the most frequently reported strategies in the list are the same whether using the iPad device or not. However, the results show that the mean score of the strategy item 'I prepare for an upcoming task such as a presentation using different features on the iPad', increased considerably from 2.1 to 3.7 after introducing the iPad as a supporting language learning tool.

Twenty four weeks after the end of the study, the overall mean score obtained from SILLIP for the use of strategies in the three categories is the same as the mean score obtained from SILLG at the same time 3.9. These results indicate that the findings from both questionnaires SILLG and SILLIP, which were conducted twenty four weeks after the end of the study, are consistent.

Looking closely at Table 35 (see Appendix 23), the results suggest that students' reported frequency use for each individual strategy item is high to medium. The mean scores ranged from a high 4.9 to a medium frequency of use 2.8. There is no strategy item with a low frequency of use. The most frequently reported strategy 'I think about my progress in Learning English' and 'I try to find as many ways as I can to use my iPad to practise English' were categorised the same in SILLG. Similarly, the least frequently used strategy 'I use the calendar app on the iPad to develop a weekly schedule for language learning' was also among the least frequently reported strategies use in SILLG.

4.4 How do language learning strategies, students used during the course, change as the course progresses?

Data from both SILLG and SILLIP questionnaires were analysed by the nonparametric Friedman's ANOVA test to examine any significant differences in the overall mean scores of the scale items at three points in time.

4.4.1 Comparison of the mean scores of individual strategy use from SILLG at three points in time

The SILLG questionnaire was analysed using the Friedman's ANOVA test to compare the differences between language learning strategy use pre, post (twelve weeks after the start of the study) and delayed (twenty four weeks after the end of the study). Before conducting the test, the data was checked against the three assumptions that need to be met in order to use the test with

confidence: 1) the independent variable is measured at three points in time i.e. prior to the study, post the study, and twenty four weeks after the end of the study. 2) The dependent variable is measured on the ordinal scale i.e. a Likert scale. 3) The data do not assume normality.

The hypotheses of the Friedman's ANOVA test are:

Null hypothesis H0 = There is no difference in the mean scores of participants' reported strategy use in SILLG at three points in time.

Alternative hypothesis H1 = The mean score of participants' reported strategy use in SILLG is significantly different at one or more points in time.

The test results are shown in the following table.

Table 15: Friedman's ANOVA Test for SILLG Questionnaire at three points in time

N	Chi-Square	df	Asymp. Sig.
21	32.863	2	.000

The result of the Friedman test indicated that there was a statistically significant difference (p=.000) between students' reported strategies use at three points in time. However, the test does not pinpoint exactly where the significant change occurred. Therefore, a Post-hoc analysis with Wilcoxon signed-rank test was conducted on the three pairs of comparisons in the SILLG data to see where the change occurred. In addition, the results of the Wilcoxon test must be reported with Bonferroni corrections in which the significant value of .05 is divided by the number of comparisons being performed, which in this case will be three and reset the Alpha at about .017 (.05/3= .017). This means that if the p value is greater than .017, then we have no statistically significant results. Such a procedure is required in the Wilcoxon test due to the application of multiple comparisons, which might cause a type 1 error i.e. reporting a result as significant when it is not. The results from the Wilcoxon test are presented in the table below.

Table 16: Wilcoxon Test for SILLG data

	Pre vs Post	Pre vs Delayed	Post vs Delayed
Z	-3.731	-4.244	-3.516
*Asymp. Sig. (2-tailed)	.000	.000	.000

*The mean difference is significant at the .017 level.

A Pairwise Comparisons test was also used to compare the pre-, post- and delayed study mean scores of the overall frequency of strategies used by learners under three conditions. According to the

result in table 16, there was a statistically significant difference in the frequency of strategy use pre- and post-study (p = .000), pre study and twenty four weeks after the end of the study (p=.000), and post the study and twenty four weeks after the end of the study (p=.000).

4.4.2 Comparison of the mean scores of individual strategy use from SILLIP at three points in time

The Friedman's ANOVA test was performed a second time in order to compare the mean scores of the SILLIP midway through the study, post the study, and twenty four weeks after the end of the study. The hypotheses of the Friedman's ANOVA test are:

Null hypothesis H0 = There is no difference in the mean scores of participants' reported strategy use in SILLIP at three points in time.

Alternative hypothesis H1 = The mean score of participants' reported strategy use in SILLIP is significantly different at one or more points in time.

The results of Friedman test are shown in the following table.

Table 17: Friedman's ANOVA Test for SILLIP Questionnaire at three points in time

N	Chi-Square	df	Asymp. Sig.
21	18.978	2	.000

According to the results of the Friedman test, as shown in the above table, a statistically significant difference (p=.000) was found in the overall reported strategy use at three points in time.

Table 18: Wilcoxon Test for SILLG data

	Midway vs Post	Midway vs Delayed	Post vs Delayed
Z	-2.221	-3.774	-3.558
*Asymp. Sig. (2-tailed)	.026	.000	.000

*The mean difference is significant at the .017 level.

Post hoc analysis with Wilcoxon test was conducted with a Bonferroni correction (see table 22 above) showed that there was no statistically significant difference between the mean scores of students' reported strategy use midway through the study and post study (p=.02). However, a statistically significant difference was found in student reported strategies use midway through the study and twenty four weeks after the end of the study with a p value of .000. In addition, there was

a statistically significant difference in the overall mean scores between student reported strategies use post the study and twenty four weeks after the end of the study (p=.000).

Therefore, we can conclude that the significant increase in the reported use of strategies during the study was maintained once the study had finished.

4.4.3 Comparison of the mean scores for the individual strategy use between SILLG and SILLIP at two points in time

In order to identify any significant differences in the use of LLSs as reported by students at two points in time namely, post the study and twenty four weeks after the end of the study; results from SILLG and SILLIP were statistically analysed using a Wilcoxon Test. Therefore, we can form our null and alternative hypotheses as follows:

H0: There is no difference in the mean scores of reported frequency use of LLSs between SILLG and SILLIP questionnaires post the study.

H1: There is a significant difference in the mean scores of reported frequency use of LLSs between SILLG and SILLIP questionnaires post the study.

H0: There is no difference in the mean scores of reported frequency use of LLSs between SILLG and SILLIP questionnaires twenty four weeks after the end of the study.

H1: There is a significant difference in the mean scores of reported frequency use of LLSs between SILLG and SILLIP questionnaires twenty four weeks after the end of the study.

Table 19: Results of Wilcoxon Test (SILLG vs SILLIP/Post Study)

SILLG vs SILLIP	Post Study	Delayed
Z	-.244	-.872
*Asymp. Sig. (2-tailed)	.808	.383

*The mean difference is significant at the .017 level.

According to the results in table 23, there was no statistically significant difference between the mean scores of the SILLG and SILLIP as reported by students post the study (p=.808). Similarly, the results of the test indicate that there was no statistically significant difference between the mean scores on both questionnaires in regard to LLSs' use twenty four weeks after the end of the study (p= .383).

In general, students reported a similar frequency use of LLSs in the SILLG and SILLIP questionnaires. Such results provide evidence that the results of the SILLG are in accordance with that of the SILLIP when they were administered to students in the same time slot.

4.5 What motivation do students have towards using tablet devices for learning, and how does this change as the course progresses?

In part D of the SILLG and SILLIP questionnaires, learners were asked how using their tablet devices could affect their motivation towards English language learning inside and outside the classroom. Learners indicated their motivation on a five-point Likert scale i.e. 1= Strongly Disagree, 2= Disagree, 3= Not Sure, 4= Agree, and 5= Strongly Agree. Frequencies and percentiles were calculated for eight items specifically designed to elicit learners' responses in relation to their motivation towards learning English.

4.5.1 Results from SILLG

The following table presents the results of each individual item from SILLG at three points in time.

Table 20: Frequency of Students' Responses to the Questions about Motivation (N=21)

No.	SILLG Item		St. Agree %	Agree %	Not Sure %	Disagree %	St. Disagree %
1	I feel motivated to learn English because I can choose the topic of my task	Pre-Study Q Post-Study Q Delayed Q	26.1 30.4 33.3	26.1 30.4 33.3	17.4 13.0 9.5	21.7 17.4 14.3	8.7 0.0 9.5
2	I feel motivated and work hard to learn English because I am in control of my learning	Pre-Study Q Post-Study Q Delayed Q	30.4 43.5 33.3	30.4 21.7 23.8	30.4 13.0 33.3	0.0 8.7 4.8	8.7 4.3 4.8
3	I feel motivated to Learn English because I can choose where to study	Pre-Study Q Post-Study Q Delayed Q	13.0 39.1 19.0	34.8 13.0 28.6	17.4 26.1 33.3	21.7 13.0 9.5	8.7 0.0 9.5
4	I feel motivated to learn English because I can choose the time to study	Pre-Study Q Post-Study Q Delayed Q	17.4 34.8 19.0	21.7 17.4 38.1	39.1 30.4 28.6	17.4 8.7 4.8	4.3 0.0 9.5
5	I feel motivated to learn English because I can choose with whom I want to study	Pre-Study Q Post-Study Q Delayed Q	13.0 26.1 19.0	30.4 17.4 23.8	21.7 34.8 33.3	26.1 13.0 14.3	8.7 0.0 9.5
6	I feel motivated to learn English because I can use my course materials at any time	Pre-Study Q Post-Study Q Delayed Q	21.7 30.4 23.8	26.1 26.1 33.3	13.0 21.7 19.0	26.1 13.0 19.0	13.0 0 .0 4.8
7	I feel confident to ask my teacher for help by sending her an email	Pre-Study Q Post-Study Q Delayed Q	30.4 30.4 33.3	30.4 30.4 33.3	21.7 21.7 14.3	8.7 8.7 9.5	0.0 0.0 9.5
8	I am more engaged in discussion related to my English task outside the classroom because I can post my thoughts using my portable	Pre-Study Q Post-Study Q Delayed Q	39.1 39.1 33.3	30.4 30.4 28.6	17.4 17.4 33.3	4.3 0.0 4.3	0.0 0.0 4.8

The results suggest an increase in self-reported motivation twelve weeks after the start of the study, for all questions except for questions 5, 7 and 8 in which students' reported-motivation remained at the same level. A further increase was revealed twenty four weeks after the end of the study, except for question 2.

In general, in terms of the motivation towards English learning, most students recorded higher percentages of 'strongly agree' and 'agree' responses on all three occasions the SILLG was administered. However, further analysis was needed to determine whether there were any significant differences among students' responses to the fourth part of the SILLG questionnaire at three points in time. For this purpose, a Friedman test was performed.

Friedman Non-Parametric Test

In this study, the test was used to determine if there were any differences in the students' responses to the fourth section of the SILLG questionnaire in relation to their motivation towards English learning as can be seen in the table below.

Table 21: Results of Friedman test

N	Chi-Square	df	Asymp. Sig.
21	13.488	2	.001

The application of the Friedman test indicates that there was a significant change (p=.001) between students' response in terms of their motivation towards English language learning at three points in time. However, the test does not pinpoint exactly where the significant change occurred. Therefore, a Wilcoxon test was run on the three pairs of comparisons in the SILLG data. The results from the Wilcoxon test is presented in the table below.

Table 22: Wilcoxon Signed Ranks Test

	Pre vs Post	Pre vs Delayed	Post vs Delayed
Z	-2.226	-2.447	-3.232
*Asymp. Sig. (2-tailed)	.026	.014	.001

*The mean difference is significant at the .017 level.

Post hoc analysis with Wilcoxon test was conducted with a Bonferroni correction applied, resulting in a significant value set at p= .017. The results showed that there were no significant differences between students' responses pre study and post study (p=.02). Statistically significant differences were found in students' responses prior to the study and twenty four weeks after the end of the study with a p value of .014. There was a statistically significant difference in the overall mean scores

between students' responses twelve weeks after the start of the study and twenty four weeks after the end of the study (p=.001).

4.5.2 Results from SILLIP

The results in table 23 suggest an increase in self- reported motivation, when the iPad was used as a supportive learning tool, twelve weeks after the start of the study, for all questions except for question 1. Analysis of item 1 suggests that 93% of students strongly agreed or agreed with the statement 'I feel motivated and work hard to learn English because the iPad helped me control my learning', this percentage decreased to 90% twelve weeks after the start of the course though an increase of 5% was identified in the delayed questionnaire.

A further increase was revealed twenty four weeks after the end of the study, except for item 2. The following table presents the results for each individual item from SILLIP at three points in time.

Table 23: Frequency of Students' Responses to the Questions about Motivation (N=21)

NO.	SILLIP Item		St. Agree %	Agree %	Not Sure %	Disagree %	St. Disagree %
1	I feel motivated and work hard to learn English because the iPad helped me control my learning	Midway-Study Q Post-Study Q Delayed Q	61.9 72.7 66.7	31.8 18.2 28.6	0.0 0.0 4.5	4.5 0.0 0.0	0.0 0.0 0.0
2	I feel motivated to learn English because I can choose the topic of my task	Midway-Study Q Post-Study Q Delayed Q	33.3 59.1 42.9	27.3 27.3 42.9	27.3 9.1 9.5	9.1 4.8 0.0	0.0 0.0 0.0
3	I feel motivated to learn English because I can choose the location of my study	Midway-Study Q Post-Study Q Delayed Q	40.9 50.0 47.6	22.7 22.7 23.8	22.7 18.2 23.8	9.1 0.0 4.8	0.0 0.0 0.0
4	I feel motivated to learn English because I can choose the time to study	Midway-Study Q Post-Study Q Delayed Q	38.1 54.5 23.8	22.7 22.7 61.9	22.7 18.2 14.3	4.5 0.0 0.0	9.5 0.0 0.0
5	I feel motivated to learn English because I can choose with whom I want to study	Midway-Study Q Post-Study Q Delayed Q	23.8 59.1 47.6	36.4 18.2 42.9	18.2 13.6 19.0	9.1 4.5 4.8	4.5 0.0 0.0
6	I feel motivated to learn English because I can access my course materials and iPad resources at any time	Midway-Study Q Post-Study Q Delayed Q	61.9 63.6 42.9	22.7 22.7 47.6	13.6 9.1 9.5	0.0 0.0 0.0	0.0 0.0 0.0
7	I feel confident about asking my teacher for help using my iPad	Midway-Study Q Post-Study Q Delayed Q	66.7 68.2 66.7	22.7 22.7 23.8	0.0 4.5 4.8	0.0 0.0 4.8	0.0 0.0 0.0
8	I am more engaged in class discussion outside the classroom because I can post my thoughts using the device	Midway-Study Q Post-Study Q Delayed Q	38.1 54.5 50.0	22.7 36.4 36.4	31.8 0.0 4.5	4.5 4.5 0.0	0.0 0.0 0.0

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Friedman Test

A Friedman test was performed to examine the differences among students' responses to SILLIP questionnaire over three points in time.

Table 24: Results of Friedman test

N	Chi-Square	df	Asymp. Sig.
21	.925	2	.630

As table 24 showed, there were no significant differences among students' overall ranking in relation to their reported-motivation (p=.63). Hence, there was no evidence that any changes occurred in regard to students' responses to the SILLIP scale.

However, the results are different from students' responses to SILLG in which significant differences were found between the overall rankings. Therefore, it was decided to compare the results of section D in SILLG and SILLIP at two points in time namely, post the study and twenty four weeks after the end of the study.

Table 25: Wilcoxon Signed Ranks Test

SILLG vs SILLIP	Post Study	Delayed
Z	-2.525	-3.824
Asymp. Sig. (2-tailed)	.012	.000

*The mean difference is significant at the .017 level.

A Wilcoxon test was conducted to see if there were any differences between the overall results of SILLG and that of SILLIP in relation to students' responses to the last section of the questionnaires, which was concerning students' motivation towards language learning. The results seem to indicate that students report their answers to the questions about motivation differently in the two questionnaires. A significant difference was found between the mean scores in SILLG and SILLIP (p=.012). Additionally, there was a statistically significant difference in the overall mean scores between students' responses in the delayed SILLG and SILLIP scales (p=.00). For example, in response to item six in the delayed SILLG, students reported positive motivation towards using the learning materials at any time 57%, in contrast to 23% who disagreed with the statement. Interestingly, responses to the same item in the delayed SILLIP suggest that none of the students disagreed with the statement in comparison to 90% who strongly agreed or agreed.

In general, it seems that students responded differently in SILLG and SILLIP. This suggested that students were not consistent in their responses to the questionnaires, which indicates the need to triangulate the questionnaire data with other data collected through the focus group interview and student diaries.

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Chapter 5: Presentation and Analysis of the Qualitative Data

5.1 Introduction

In this chapter, the qualitative data obtained from the analysis of the think aloud protocol (TAP), student diaries, focus group interview, and the online log file are presented. All were used to elicit data on the extent to which students appeared to be learning language autonomously. The use of student diaries and focus group interview data allowed the researcher to explore whether students' use of LLSs changed after the course and the extent to which this has an effect on their motivation. TAP helped in providing another layer of evidence, particularly in relation to the language learning strategies, which occurred during the process involved in completing the language task. In fact, think aloud methodology was needed to capture what students actually did when using their tablet devices for language learning and to gain some understanding into their thought processes while engaged in the task. In addition to TAP was the online log file data, which helped provide further insight into how students' actually use their devices in language learning outside the class. Qualitative data was then triangulated with data from questionnaires in the discussion chapter.

This chapter falls into four sections in which each section focuses on one set of data. In the first section, results of the protocols are presented, which include frequencies, types, and ranks of LLSs use along with findings on students' interaction with the iPad device when processing the language task. The second and third sections report the results of the degree of learner autonomy in relation to data from student diaries and interviews respectively. The last section reports data from online tracker log file.

5.2 Results from Think Aloud Protocol

This section presents the findings relating to to the first research question:

What language learning strategies do students appear to use during the course and how do these change as the course progresses?

As described in the methodology chapter, the data collected from nine think aloud sessions was transcribed, translated, coded and classified into three categories cognitive, metacognitive, and social strategies. The analysis of the protocols revealed the use of LLSs sets and is presented below in terms of frequencies, types, and ranks. This is followed by a further discussion on in-depth decoding of the protocol, based on several extracts from the TAP data. These results aimed at providing insight into

the processes students employed while working and engaging with the iPad device to complete their language task.

5.2.1 Frequencies of Language Learning Strategy

Analysis of the transcripts shows a rich use of a variety of strategies employed in different ways by Saudi students. As they worked on their language task, each student spontaneously reported the use of sets of strategies that are not necessarily shared by other students working on the same task. The following table shows the number of LLSs in each of the strategy categories, the proportion of references to strategy use in each category found in the transcripts, and the number of occurrences.

Table 26: Frequencies of strategy use from TAP (N=9)

Strategy Category	No. of Items	%	Occurrences	%
Metacognitive	11	34.3	203	39.2
Cognitive	17	53.0	252	48.7
Social/Affective	4	12.5	62	11.2
Overall Occurrences			517	

As can be seen from above table, the cognitive strategies are the most frequently used category of strategies, followed by metacognitive, and social/affective strategies, which were the least frequently used. It was expected that social/affective strategies would be the least frequently used due to the nature of the language task in which students were asked to report what was going on in their mind while dealing directly with the task. Therefore, the reported strategies were only those needed to complete the language activity. Social/affective strategies, therefore, would not be expected to be used since it was a one to one session without any opportunity to interact with other students or teachers. In addition, the order of frequency is in line with the results provided by the questionnaires. In general, the results indicate that students used a wide range of strategies. The following table shows the different categories of strategies, the number of occurrences of individual strategies in each category, and the number of students reporting the use of each strategy item.

Table 27: Frequencies of strategy use from the protocols by descending order of the number of occurrences (N=9)

No	Type of Learning strategy	Number of occurrence	Percentage out of total occurrences	Frequency Rank	Number of Students that use strategy	Percentage out of total number of students
Metacognitive						
1	Advance organizer	9	1.7	16	7	77
2	Direct attention	13	2.5	13	5	55
3	Self-management	35	6.7	2	9	100
4	Advance preparation	19	3.6	9	7	77
5	Self-monitoring	12	2.3	14	7	77
6	Delayed production	24	4.6	5	9	100
7	Self-evaluation	25	4.8	4	8	88
8	Self-diagnosis	33	6.3	3	9	100
9	Being persistent in dealing with tasks	8	1.5	17	5	55
10	Being tolerant of unclear explanation or ambiguity in the task	4	0.7	17	5	55
11	Reviewing	19	3.6	9	6	66
Cognitive						
12	Repetition	22	4.2	7	8	88
13	Resourcing	22	4.2	7	9	100
14	Translation	40	7.7	1	9	100
15	Note-taking	12	2.3	14	7	77
16	Recombination	6	1.1	18	5	55
17	Auditory representation	8	1.5	17	5	55
18	Contextualization	3	0.5	20	4	44
19	Elaboration	3	0.5	20	3	33
20	Transfer of known knowledge	17	3.2	10	9	100
21	Inferencing	10	1.9	15	4	44
22	Analysis	15	2.9	12	7	77
23	Elimination	15	2.9	12	6	66
24	Getting the gist of reading texts/ skimming	17	3.2	10	7	77
25	Memorising	4	0.7	19	2	22
26	Paraphrasing	21	4.0	8	8	88
27	Reading loud	25	4.8	4	9	100
28	Using world knowledge (imagery)	9	1.7	16	6	66
Social/Affective						
29	Self-encouragement	6	1.1	18	4	44
30	Sense of achievement	23	4.4	6	9	100
31	Emotion expressing reaction to the tasks	17	3.2	10	6	66
32	Seeking help	16	3.0	11	6	66
Total		517	100		9	100

Having identified the most and the least prominent strategies in TAP transcripts, I shall now shed light on evidence from TAP, which illustrates the dynamic use of strategies. The following excerpts were selected to demonstrate how the iPad supported students in their task and the extent to which students can apply in real time tasks strategies they claimed to be using in the questionnaires.

5.2.2 The use of LLSs among students when using the iPad as a supportive learning tool: examples from TAP data

In this section, I will present a number of strategies supported with examples from think aloud protocol in an attempt to determine the features of the iPad device that might facilitate students' learning process.

Cognitive Strategies

The most used category of strategy was cognitive as was shown in the previous section. The use of cognitive strategies is reflected in the data when students handle their learning task by accessing different features of the iPad. The most frequently used strategy was translation, which students tended to use in an attempt to reduce the level of text difficulty. In such a strategy, students produced a literal translation from English to Arabic and vice versa on both vocabulary and sentence level using apps such as Google Translate, as we can see from the following examples.

> *A5: / I'll copy all the written text and then… ok just a minute.. yes.. then I'll translate it/*

This strategy was also observed in the classroom when most students appeared to have the habit of translating the unknown English words used in the lesson using their iPads. At times, students used a translation strategy to convey the meaning of a key word in a sentence.

> *A2: /I will try to translate this first… mmm I suspect its how .. we can protect.. mmm …we can protect.. I don't know it.. I will translate it to know the meaning of protect in English/*

The pauses and hesitation before the word 'protect' indicate that the student was struggling to produce the correct vocabulary item which led her to take the decision to translate it into Arabic using Google Translate app.

With regard to the use of the iPad, students appeared to use translation apps on the iPad to complete the language activity successfully. The following extracts suggest this claim.

> *A1: / I use translate app… now I will copy the question from iTune course page and paste it into translate app… I will translate it into Arabic/*

The claim is further supported by student A7 when she confirmed using a translation app on the iPad to convert the whole text into English.

> *A7: Student: / I'll look for the thing I didn't understand and I'll translate them/*

Researcher: How are you going to do this?

Student: / I'll use google translate app… there are many words that I didn't understand… so I'll translate the whole question/

Use of the iPad facilitates students learning by giving them the option to search for alternatives apps. As we can see from the following extract, the student was aware of the limitations of the Google app and its inability to convey the correct meaning for her.

A5: / yes… it's better than… than.. this one mm I mean google app is not clear.. this is better and clearer/

Overall, translation seems to be one of the most frequently used strategies among these students, especially those with a low level of proficiency in English.

Another frequently used cognitive strategy was *resourcing,* which all students in the TAP task used. Search engines, in particular 'Google and Safari apps' available via the iPad platform, were used frequently by all students to search for the information required to complete the task. The user-friendly platform of the iPad device allowed them to load web pages quickly and choose what met the requirements of the activity.

A1: /mmm to put mmmm no I will search first to get more ideas .. to know about it more/ …/ I will search using Safari app/

In A1's think aloud statement, she is shown to be trying to generate ideas. Her decision to enter the Safari search engine indicates that she was focused on identifying relevant information and extending her knowledge of the task topic. The multi-touch feature of the iPad device made such a task more accessible by allowing students to navigate easily between pages.

Repetition in which students imitate a language model, practise and silently rehearse is a cognitive strategy as defined by O'Malley and Chamot (1990). Analysis of the protocols demonstrates that most students tend to use this strategy in an attempt to try out new words, or complete their sentences as illustrated in the following example.

A2: / now I'm reading the word several times … the words which I couldn't pronounce/ …[laughing]../ I will start recording now/

Repeating the same word or phrase is often a sign of encountering a problem. Students tried to recall the target item or retrieve it by repeating it to themselves or imitating a language model. For instance, A5 in

the following excerpt appeared to use the Google app to in order to listen to some new vocabulary (students used Google app to both translate and hear the pronunciation of unknown words).

> *A5: / I will practise to say them… some words are new to me mmm .. I will either repeat it to myself or I will enter them in google translate app …and he will read them for me/*

Overlap can easily exist between the repetition and the auditory representation strategies, which is defined as the retention of the sound for a word or phrase. Similar to the repetition strategy, students reported their reliance on the iPad in several instances to recall the sound of some vocabulary. The following are examples of this strategy.

> *A3: / I heard this word before.. extinction../*
>
> **the student listened to google translate word modelling**
>
> *Researcher: why did you enter the word in google?*
>
> *Student: / to listen to the sound of the word.. to make sure that I'm pronouncing it correctly/*

It is noticeable that the student was struggling to retain the sound of the word in memory. Her wish to pronounce correctly led her to restore the translate app on the iPad so that she could hear the word pronounced.

Elimination and skimming, in the present think aloud data, include eliminating the most unlikely options available and obtaining the relevant information. Again, it was noticed that students took advantage of the iPad device to help them complete the task. Concerning the former strategy, most students were found to make navigational decisions based on the content and the web pages design. The following examples illustrate the use of the elimination strategy.

> *A2: / I chose this website because.. because its about .. a list of the most important endangered animals.. I chose this website./*

It appeared that students used the iPad to look for suitable content for their task. They seemed to avoid difficult topics and irrelevant information by navigating between web pages and chose those with images and lists. For example, search features like blurbs describing each website might help A2 to be more focused in identifying the needed information.

As for the skimming strategy, several registered instances indicated that seven out of nine students in the protocol data used this strategy to obtain the most important information for the assigned language activity. The following excerpt shows occurrences of the skimming strategy.

> *A5: / mmm I'll see what is the most suitable thing to read about… the animal I came up with .. and ..I mean mmm yes this is a good one.. I'm just browsing… I'm reading only the titles..the head titles/*

TAP data indicates that eliminating irrelevant or difficult content is a strategy that is often used in conjunction with the skimming strategy. Students seemed to read parts of sentences, titles, or some key words in order to ignore irrelevant information.

On the other hand, note taking was one of the least frequently used cognitive strategies, in which students outline or summarise the most important information orally or in written form as is shown in the following example.

> *A1: / I won't write everything.. for example I won't describe the Panda's hands and feet .. no no… I will focus on the most relevant information/*

Reading on the iPad involved copying and pasting text from online resources in order to summarise it. To illustrate, students used a note taking strategy in which they read through the different website pages then copied only the relevant information and pasted it on the page app. Then, they read back over their notes and the different information they had in order to prepare their script before recording their audio.

Metacognitive Strategies

Monitoring the learning process, self-evaluating, planning and reviewing are all central to the metacognitive learning strategies (Oxford, 1990). Several instances of how students, in the current think aloud data, approached such strategies to complete the learning task are presented below.

The first example shows some students monitoring their learning by assessing their language in terms of vocabulary, pronunciation, and grammar.

> *A9: / there is something wrong … there is a letter that is incorrect..with the word 'prepare', I forgot to put the word*
>
> *Researcher: how can you tell that there is something wrong with the spelling of the word?*
>
> *Student: I know it's incorrect*
>
> *Researcher: Yeah but how can you tell?*
>
> *Student: I found it.. I'll go to google.. not only google.. there are many other apps I often use to check my spelling mmm sometimes I pronounce a word incorrectly, so the app helps me to get the right spelling or pronunciation and meaning as well/*

The use of this strategy also involved students' reflection on both their negative and positive performances as A9 stated her dissatisfaction with the outcome of her sentence. Students also used a delayed production

strategy, in which they go through several stages of editing, and evaluating their content with the aim of achieving satisfaction with their final answer. This includes correcting grammatical errors, changing parts of the script, and checking their pronunciation as can be seen below.

> *A8: I will listen to my self ..mmm to see my pronunciation is correct and to see what I said because I say it mmmm I keep with that and I think I listen more than one time to think about what I say*

> *A7: / I'll do it again.. I think I have to do it again because of my introduction.. maybe because I was nervous in the first time so I need to do it again/*

Another metacognitive strategy, which was shared by all students in the protocol data, was reviewing. In this strategy, students tended to read the written text or listen to their recording several times in order to confirm their understanding. The following is an example of the reviewing strategy.

> *A9:/ I want to go back to read it again… I want to check whether what I read was right or not mmm I want to make sure that I understood that/*

Social/Affective Strategies

Social/affective strategies were the least frequently used by students in the think aloud data. Students in the present think aloud data compensated for the lack of support from the teacher by making use of their iPad device as a means with which they were able to appeal for help and get some assistance to complete the language activity. This included using some apps, such as Google search to look for information, and a translate app, which helped them in understanding the written text and converting their answer to the target language.

When students were asked what they normally do in different situations when they do their task, they seemed to be aware of the importance of social strategies. Most of them claimed that they usually seek help from their friend or family as can be seen from the following example.

> *A7: / usually I would ask my husband..he is better than me in English but not always.. only when he is not busy .. otherwise I would ask someone else I know other people whose English is very good/*

Affective strategies which includes reducing anxiety and encouraging themselves or each other were used occasionally by some students during the language task. It was noticed that most students tended to express their feeling toward the language task, encourage themselves, and express their satisfaction with their learning. Examples are presented below.

> *A1: /but I wasn't satisfied about what I have done.. I mean I'm not happy because I had to repeat mmm I mean change things a lot though it was the same topic?/*

> *A4: / I'm pleased with what I have done so far… yeah I think that is enough/*

To summarise, students in the think aloud data seemed to use a variety of strategies. The cognitive and metacognitive strategies were used more frequently than social/affective strategies. This was attributed to the nature of the language task in which students were asked to report what was going on in their mind while dealing directly with the task. Besides, it was a one to one session without any opportunity to interact with other students or teachers rather than the teacher-researcher. Overall, the TAP analysis indicates that the iPad was used as a medium for learning: students were able to engage with and manipulate their resources and ideas.

5.3 Results from Student Diaries

In this section, the researcher considers evidence from the diaries showing how the potential of the iPad device and the mobile-assisted language learning approach appear to have enhanced some forms of learner autonomy. Six themes emerged from the data: development of LLSs, collaboration, motivation, reflection, teacher's role and experience with MALL. An overview of the core themes and the sub-categories based on students' diary entries are presented in the table below.

Table 28: Overview of the main themes from student diaries data

Core themes (Parent nodes)	Sub-themes (Child nodes)
Development of Language Learning Strategies	Cognitive Strategies
	Metacognitive Strategies
	Social Strategies
Collaboration	Working Together Learning from Peers Feedback
Motivation	Study Habits Self-confidence Enjoying Learning English Effects on Participation
Reflection on the Language Learning Experience	
Teacher's Role	
Experience with MALL	Positive Aspects
	Negative Aspects

Presented in the next sub-section is, for each theme, a description of the main themes as evidenced by extracts from student diaries entries.

5.3.1 Findings Relating to the First Research Question: The Development of Language Learning Strategies

Cognitive Strategies

Analysis of student diaries showed that students continually developed a variety of language learning strategies during the course. With regard to cognitive strategies, when working with the iPad device to

learn English students reported the use of a number of such strategies. For example, some referred to an online dictionary in order to look up the meaning of unfamiliar words required for the language task.

> *'I use the dictionary regularly so the iPad was like a mobile that I can use any time or place'*

In addition, many students seemed to rely on the Google search engine to look for information related to the content of the learning activity.

> *'The homework was easy but I didn't know anything about the topics in the foods, I am now good at searching topics on Google so I searched this topic and found some photographs and began to write sentences using the correct formulas.'*

Other students believed that translating from English to Arabic helped them in their understanding. Therefore, they tended to look for information, or write an answer in their first language and then translate it to English.

> *'At the start, I found the homework difficult and did not understand the question; but I used Google translate to translate some words which appeared mysterious and I could not understand'*

This example was further emphasised by Hala who relied on her device to translate words and phrases she found on the Internet in order to fulfil the requirements of the language task.

> *'To complete the homework I answered it in Arabic and then in English and translated any words which I did not know. I found it easy to use my iPad to translate my answer.'*

Concerning English sounds, many students reported having problems with English pronunciation. Therefore, they applied different strategies to practise English sounds. This included listening to native speakers on some learning apps via the iPad.

> *'The application made available has really helped in developing myself; this include TED App where I can hear native speakers of English and distinguish between their different accents.'*

Nadia explained that she could practise the sounds of English by listening to an online speaking dictionary and then imitating it.

> *'I realised that one of the words I wanted to use was difficult to pronounce and thought about changing it. Instead I used the online translator to hear the pronunciation and practise it.'*

In addition, some students reported applying cognitive strategies, such as reading English books, watching programmes in English, and downloading language-learning apps for grammar and vocabulary learning. The extract below is an example of a student's attempt to look for ways to practise their English.

> *'The iPad has also contributed to my enjoyment of some of my hobbies such as reading novels by downloading the electronic library App. I have used it to download free novels and stories and then read*

them without connection to the internet. Instead of carrying 3 novels and books everywhere, I am now able to carry all my favourite books with me at all times without taking up a lot of space in my bag.'

Nadia also reported watching authentic English programmes without relying on translation in order to improve her listening skills.

'I have begun to watch film in English without subtitles, and there are some words which I don't understand but slowly I will know and understand this language.'

Others tried to find applications to aid their language learning as is shown in the comment below.

'I have benefited a lot from the iPad and have tried to download applications on the iPad, similar to the ones we already have, to improve my English.'

Another example of cognitive strategies is imagery in which some students tend to match vocabulary items to an image using 'NearPod' app.

'when we used the 'NearPod' App and link the pictures and words, this helped me to remember new words and when asked about the words the next day I could recall them.'

Metacognitive Strategies

Results from students' entries revealed several metacognitive strategies that were applied by students during the progress of the course. Organisation of the learning process, which includes seeking more practice opportunities and planning for future learning, was a strategy used by most. For example, Huda explained how she planned her time around her specific needs. She seemed to be aware of the importance of being well prepared for the final exam in that she decided to dedicate her spare time to practising English.

'This week I made a timetable and identified two units for each day to learn the new words and study the grammar- and thankfully I stayed to that timetable to be ready for final exams; and during the weekend I prepared for the quiz.'

Likewise, Mona allocated time for regular daily practice. Her comment indicates that her planning strategy started to develop only after becoming familiar with the new technology, which explains her regret of not beginning this earlier in the course.

'I have created a timetable on the iPad to practise new words daily, but sadly I started this process later in the project'

A similar point was shared by another student who claimed that the applications provided via the iPad had improved her self-discipline and developed her self-management skills.

'istudiez pro app has developed my organisational skills and has become like a diary which would provide a reminder if I had forgotten an important deadline or meeting.'

Nadia also claimed that the read and unread mark feature in the iTune U course app helped her manage her studying more efficiently.

> *'iTunes U application has helped me with my work; I can categorise my files into read and unread making it easy for me to see which have not been completed.'*

In addition, many students reported their intention to practise more English in order to improve their skills.

> *'I have started to create time to study on the iPad, whereas before I did not know how to use it; I still face some difficulties but I have seen a noticeable improvement.'*

As for another metacognitive strategy, self-evaluating and self-monitoring, Reem, for instance, admitted that while she felt her grammar skills were improving, she was still having some problems. However, being aware of her weak points did not hinder her willingness to work hard and continue to try to improve.

> *'I have begun to understand grammar more than before; I try to translate the new words to understand them - but now I have developed my understanding. I still have some difficulties with grammar but I will continue to try.'*

Evaluating learning is not restricted to identifying improvement in language skills, but includes students observing their mistakes and being honest about them.

> *'I am not happy with my level because I have not tried seriously to improve it; but from now I will memorise words in English and learn more right and wrong and how to connect words from listening and I have learned many things to make it easier for myself.'*

Social Strategies

The use of some applications such as 'Ask3' and' Fuze meeting' seemed to create optimal conditions for students to interact socially with others without having to sit in a regular classroom.

> *'We were able to ask questions on the 'Ask3' as well as interact with other classmates and use social networking meaning that any questions we had could be answered by others using the voice facility; working as a group strengthens bonding and excitement amongst the students.'*

Comments from students revealed that most students enjoyed participating in out of class discussion. Besides the required language activities set up by the teacher, students made additional arrangements on their own to interact with each other and practise English speaking.

> *'There are some apps on the iPad which have made it possible to connect with my classmates outside of class; especially 'Fuze' which I began using to complete homework tasks and for speaking practice.'*

Other students claimed that using the online meeting applications was not only to improve their English but also to exchange ideas and share knowledge.

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> *'I felt happy when I got the iPad and the group work between pupils which allows us to share ideas with one another on the iPad was useful.'*

In addition, the use of the iPad apps seemed to facilitate interaction with the teacher. Many students expressed their awareness of the importance of communication between the teacher and students and explained how this was enabled by such a device.

> *'Being able to contact you at any time is useful to us if we have any questions or wish to discuss anything with our classmates.'*

5.3.2 Findings Relating to the Second Research Question: Collaborative Learning

Working Together

There were many comments from students relating to group work and student views were divided between positive and negative experiences. Most mentioned that they preferred working together as this allowed them to share knowledge and exchange ideas with their classmates.

> *'I worked within a group and understood more clearly because we could discuss with one another and exchange ideas'*

Others stated that teamwork gave them the opportunity to interact socially with one another.

> *'I like the collaborative task of working in a group because it has helped build my communication with my classmates; some of whom I had limited communication with in class only. But now I can communicate with them.'*

It seems that the new learning environment allowed students to form emotional bonds and build bridges with other members of their class, who they previously did not have the chance to get to know. Such optimal conditions, created by the iPad device for student interaction, were especially relevant in a situation where face to face interaction was not typically possible.

> *'We began to complete the homework and called Nadia and we began to search the phone numbers for the other members of the group. It was the first time I had contacted Huda and Zenah as my relationship with them was in the classroom only. But that day I contacted them and we communicated and commented on the pictures and we all agreed on the plan.'*

Some of the apps that were introduced to students during the course have facilitated 'anytime' or 'non-real-time' communication either among students or with the teacher.

> *'Ask3 App has helped me to communicate with the teacher and my classmates via discussion and commenting on one another'*

Some students reported their preference for the virtual learning environment, which was helpful in encouraging them to ask questions in less stressful situations. However, other groups of students expressed their concern about some aspects of group work, especially in the context of the study. For example, two

students who held opposing views believed that working together was less beneficial due to the inactivity of some students in doing the language task.

> *'The group that I am in at the moment is worse than the one before; at least in the previous group we used to work together but in this group each person works individually until they have a question and ask others.'*

For some students, group work became difficult when one member of the group took the leadership role, hence becoming responsible for the completion of the task and the contribution of other members.

> *To be honest, I didn't like the idea of being the leader of the group though one of the members helped me with the presentation. I felt the others didn't contribute at all. Nadia was late sending her section of work which meant the whole task was submitted late; this is frustrating because I had to bear the consequences of that.'*

In addition, time constraints was another negative factor in the experience of group work for some students. They described how crucial, yet challenging time management was in order to form their group virtually.

> *'The problem of group work is that it can be difficult to complete a group task if the whole group is not available at the same time or if we experience problems with the App. This has happened with 'Fuze' App when I could not access it at the same time as the rest of the group. '*

As we have seen, the preference of either individual or group work depended on the benefits students attained from such kinds of learning.

Learning from Peers

Some students reported that collaborative group work enabled them to learn from each other, especially when they worked outside the classroom via their iPads. Many claimed that they had turned to their classmates for help either in correcting their English or for helping them with technical issues.

> *'Sometime I would ask my classmates about how they use it and my group and I decided to meet up to understand how to use it'*

Furthermore, reading and listening to other students' contributions was another benefit identified by students. In several cases, students relied on the homework posted by their peers as a reference to revise and correct their own work. Some claimed that reading or listening to others' answers was helpful in understanding the content of the task, or noticing the errors in their performance.

> *'Regarding ASK3 the first time I used it I liked the idea and the first time we were sent a question I answered it but my voice did not record but I could see answers from other classmates. I then fixed it and it worked.'*

> *'Then after class I would compare my answer with that of my classmates and try to find questions I couldn't answer and sometimes I did resolve and answer my questions.'*

Such peer teaching and learning would not have been possible without the affordances provided by the iPad device and the new learning approach.

> *'I liked the simplicity of both programmes that I used and that I could hear the other group members before recording; and when I recorded the teacher would comment on my mistakes so that I could learn from them and not become embarrassed during speaking in class.'*

> *'ASK3 the good thing about this software was I could add a photograph and that I could record more than one video and delete them; I could also watch other people's videos and hear their comments.'*

In addition, some reluctant students reported that the availability of their peers' assignments worked as an encouragement to them to complete their own work.

> *'I went home and realised that my other classmates were able to complete the task, therefore I would be able to do the same.'*

> *I remember the first time I used this programme for homework and heard the recording of one on my classmates and I wanted to take part. So I took a pen and paper and wrote down all my answers some in Arabic and some in English.'*

Feedback

Many students in the current study considered feedback an essential follow-up activity that gave them a sense of community. Students were keen to read the teacher's feedback on others' work, which helped them to improve their own mistakes.

> *'I thought about the comment from the teacher to my other classmates that the recording should be clear, pronunciation correct and sentences understandable.'*

In addition, using the iPad device added a new dimension to the whole assessment process. Both students and the teacher used the device as a medium through which they were able to give and receive immediate feedback. In their diaries, students emphasised that the technological learning environment offered the opportunity to view and evaluate their language output immediately.

> *'I liked the idea of sending our homework to you to correct it and send it back, it was enjoyable and a good way for feedback and for me to learn and continue to become better at using the apps.'*

5.3.3 Findings Relating to the Third Research Question: Motivation towards Language Learning

Study Habit

The data collected from the student diaries showed an enhancement in motivation to learn English. Several students reported their attempts to improve their English skills. They were motivated enough to do extra work on their own either by seeking opportunities to practise English, or by interacting with other language users.

> *'I have to depend on myself to develop further and try to practise the language with the girls in my class, not just with my family and friends'*

Comments also indicated that students had started to develop the habit of regularly using audio-visual media as a means to develop their listening and speaking skills.

> *'I have become used to listening to videos on the iPad and it has become a routine for me'*

> *'Listening to videos has become a daily habit for me'*

Self-confidence

In general, students reported an increase in their self-confidence with regard to language learning. Students, who were shy or not comfortable about speaking in public, started to build up more confidence and were willing to take the challenge and try.

> *'Every day I watch a speech on 'Ted Talk', this has helped improve my self-esteem and imagine myself in their place.'*

Other students claimed their confidence had improved since they were able to perform better in their presentations.

> *'I was very happy with the presentation and my performance, as I didn't expect to be so confident. I hope to always give my best but I honestly didn't recognise myself when presenting with confidence.'*

Further evidence, in the following comment, indicates how students noticed an improvement in the quality of their speaking skills. One was able to initiate a conversation in English because she had enriched her vocabulary repertoire.

> *'I am trying to strengthen my English language and I feel I have become better because I have a new vocabulary of words and I speak in English with my Husband.'*

It must be emphasised here that confidence is not directly related to actual abilities in English language. However, that increased confidence may well mean the students are more likely to use and, as a result, probably further improve their English.

Enjoying Learning English

Most comments showed that students had found the course to be fun, novel, and challenging.

> *'An enjoyable experience which provided a change from the daily routine'*

The majority of students were fond of the new teaching method to the extent they hoped it would be extended for a longer period.

> *'Overall, the course has been enjoyable and beneficial but it is not enough and I wish it was longer. '*

The novelty of learning English using the iPad may have raised students' motivation, as they were eager to learn English more than other subjects.

> *'For me I enjoy learning this language and would not ignore it like other subjects.'*

Further comments from the student diaries indicated a general level of satisfaction with the innovative form of learning, which involved learning on the go using the iPad device.

> *'Currently I am satisfied with everything. I do find some difficulty in some areas but I must climb the ladder step by step. I feel lucky to have been selected to take part and once more I thank you.'*

Students reported that they were satisfied with what they had produced in the language task.

> *'It is a good thing for my grades to change for the better'*

However, one student was not happy with her achievement in English and blamed herself for not taking the course seriously although she expressed her willingness to study harder and practise more.

> *'I am not happy with my level because I have not tried hard enough to improve it; but from now on I will learn many things to make it easier for myself.'*

Likewise, another student expressed her dissatisfaction with the course and with learning. She remarked upon the difficulties she had encountered in forming group work in the online synchronous environment.

> *'I don't feel satisfied because I had difficulty with the programme or creating a group'*

Effects on Participation

Fear of making mistakes and embarrassment that their peers would comment on their work were the main reasons for students' unwillingness to participate in any class discussion. However, some students felt that using the iPad helped them to overcome their fear. For example, using apps such as the Near Pod App, students were able to participate in the class by posting their answer via the app to the teacher. Thus, other members of the group could not access their classmates' contributions. Such an app was used at the

beginning of the course when students lacked confidence and were afraid of making mistakes in front of their peers.

> *'It is good that not my whole group could see the answers I was giving'*

In addition, students started to look for opportunities to explore English and use it in real life. For example, some learners avoided participation in the speaking class because they did not feel comfortable to speak in front of their peers. However, their involvement in class discussion was different after a few weeks of the course.

> *'I am happy because I'm gaining new skills such as being able to speak in English in some situations I have faced this week, I was able to resolve the problem.'*

The students also admired the flexibility of using the iPad to interact with their classmates and the teacher.

> *'An enjoyable course, which encourages participation and gives all the students in the group the opportunity to contribute answers. It is an opportunity for interaction with the teacher, the iPad adds a lighter, more fun side and helps with thinking and maintaining concentration.'*

5.3.4. Findings Relating to the Fourth Research Question: Motivation towards Tablet Devices

Reflection on the Language Learning Experience

Most students expressed positivity about the integration of the iPad device into the language course. Some of comments indicated a shift in students' attitude toward language learning. They claimed that their previous experience in learning English was based on finishing the textbook and being prepared for the exam. This view changed favourably with the new intervention.

> *'Focus was on the second book and finishing this before the exam; but with the opportunity to take part in this research we have gained many skills that we didn't have before. It was important to put our language into practice even though we didn't know the grades we would achieve; we knew that we would put in practice or not'.*

Most students expressed their fear that the course would be burdensome and a great challenge since some of them could be said to be technologically illiterate. However, this view changed gradually.

> *'Although at first I questioned how we could learn using the iPad, I had thought that this method of learning would be difficult but I found the opposite and I feel happy as it has helped us connect with one another.'*

In addition to the change in student attitude toward the use of the iPad in learning English, students highlighted how their use of the iPad had transformed; it moved from being solely an entertainment device to be a mediated language learning tool.

> *'At the start, we were not used to using the iPad for studying but more for leisure; but now we have learned how the positive use of this tool is the opposite to how we were using it previously'*

In terms of progress in English, students' comments were mainly positive.

> *'I have felt my ability in the English language has slowly started to develop'*

With respect to listening skills, many students felt they had improved. The majority praised the opportunities offered by the different applications on the iPad, and claimed they had made their listening practice more effective and useful.

> *'To be honest, I think my listening skills have improved greatly because I can listen to extracts at home as well as in class.'*

Students also made full use of the language apps available via the iPad for independent listening practice. The material found on the iPad such as the TED TALK app not only provides students with practice opportunities, but also authentic materials.

As for speaking skills, students perceived their previous experience of communicating in English as being difficult. One student reported her experience when trying to interact with her teacher. As shown in her following comment, she could not have a discussion with the teacher due to her anxiety of making mistakes. Therefore, it seems that shyness and the fear of 'losing face' were barriers to student participation in any sort of discussion.

> *'For me I felt this course was better because I usually feel nervous when I sit with the teacher for speaking. I sometimes don't know what to say but this needs practice. I sometimes feel nervous when sitting with the teacher to speak, maybe it is because she is also Arab and I feel embarrassed to make mistakes. I am not sure.'*

However, this behaviour changed following introduction of the iPad assisted language course. Most students reported progress in their speaking skills.

> *'I feel my skills have developed, particularly my speaking skills, and I find fewer difficulties than before.'*

Students appreciated the learning apps on the iPad such as 'Speaking Pal' and 'Ask3', which added to their learning experience by providing helpful resources.

> *'Speaking Pal App has provided the opportunity to hear myself speak and correct my pronunciation and mistakes'*

Teacher's Role

On the subject of a teacher's responsibilities in the language classroom, most students agreed that the teacher plays an important role in guiding, encouraging, and offering her knowledge. Some students pointed out the importance of a teacher's guidance throughout the course.

> *'The teacher's instructions help us to realise our mistakes and it shows the positive use of the iPad for education.'*

Further evidence emerged of student appraisal of the teacher's performance. They clearly appreciated the useful explanations they had received about the topic and the language points, and the many attempts their teacher had made to help them understand.

> *'I understand much better than before due to the teacher's wonderful teaching method. I now study with more enthusiasm'*

Another point that was mentioned by students in regard to a teacher's duties was feedback, which they recognised as a way to encourage and motivate them to continue.

> *'It was a good experience to interact with the teacher and receive encouragement and positive reinforcement and pointing out our mistakes and how to correct it through interaction. This made us complete the homework as it felt more like training to follow up what we had learned'*

Another student described how eager she was to receive teacher's feedback and the positive impact this had on her level of motivation.

> *'I waited for feedback from the teacher and when I received this I was very happy and relieved.'*

Experience with MALL

Students commented on both positive and negative aspects of the course based on their experience in learning English via the iPad device.

Positive Aspects

The use of the iPad in the delivery of the language course was perceived by students as a positive learning experience, especially the opportunity to continue learning outside the formal context of the classroom. Unsurprisingly, portability was a key benefit of using the iPad for accomplishing a wider variety of activities anytime and anywhere.

> *'Using the iPad has given me many opportunities which I didn't have before and it has saved time, as well as being easy to use and travel with, and use for personal use.'*

Such comments are not just positive but very promising as many students reported that the use of technology in learning led to other methods of learning.

> *'My language skills have developed because I can revise and practice anywhere and at any time and I have taken it with me to the beach! not just that but on Thursdays if I am in court and cannot attend college I take the iPad with me to court and browse through the lessons and tasks.'*

Another point made in relation to students' perception of the course was convenience. Some students claimed that using the iPad device added a new dimension to the learning process, making it more fun,

effective, and consistent. The aspect of convenience meant that the course allowed them to work according to their desired learning style and saved them time and effort.

> *'I really like the idea of the iPad, and it has reduced the time and effort of carrying paper notes and books'.*

Another student shared the same view.

> *'Using the iPad has added some fun to homework, it was also easy to use, light weight, useful, effective, and it takes less time and effort'.*

Flexibility in using the device for learning also played a role in transferring students' skills to other subject areas. As indicated by the following excerpts, some students tried to boost their learning by applying their acquired knowledge in practical and other learning situations.

> *'Technology and in particular the iPad has helped me in particular not just with the English language, but also other subjects. I began to use the device for all other projects on other subjects which has saved the time I used to spend setting up my laptop; so now I switch on the device and write what I want. It has also helped that I don't need to print out my work and have it graded by a teacher. It is very simple for her to comment on it and I just print my final copy'*

Furthermore, students pointed out several merits of studying in this kind of environment. It seems that the students perceived the iPad assisted language learning approach as useful.

> *'Using the iPad has helped me understand about the lesson. In my opinion, using the iPad is a good experiment because the way in which education is delivered should be developed and made more interesting. '*

With respect to the learning opportunities associated with the use of the iPad device, students perceived it as an effective tool that enhanced their learning by providing interactive apps which were not available in the conventional classroom.

> *'It is an enjoyable App where I felt like I was in the same room with my classmates and we were connected.'*

It was the interactive nature of the course, and the facilities provided via the iPad that some students found to be most appealing.

> *'Being able to contact you at any time is useful to us if we have any questions or wish to discuss anything with our classmates. In relation to the course, it is a great idea to use technology for a useful purpose that will help in our daily lives as much as we use it for entertainment. It is a good idea to break the routine and use new tools for learning and communicating with others; not forgetting that we can connect at any time and any location.'*

In addition, certain limitations of using a laptop were also eliminated. For example, some students claimed that they rarely used their laptop outside the classroom due to its heavy weight. By contrast, they used their iPad to complete different learning tasks, including the assignment of other subjects. They also used their iPad outside the classroom to check emails, browse the Internet, and download course lessons.

> *'The advantage I found when comparing it to the laptop is that I could use it anywhere without a limit on place or time. I was at the beach so I used my iPad to access emails and communicate with my classmates'*

From the positivity in the points of view above, it seems that iPad-assisted language learning created suitable conditions to support students in their learning.

Negative Aspects

Despite the positive remarks the majority of students made about the course, some openly expressed their concerns about the new teaching and learning. A prominent concern was access to the Internet and the problem of disconnection.

> *'I faced some problems. For example, where I live we suffer from slow internet speed and sometimes a lack of connection'*

While using the iPad to communicate with other students via different interactive apps was a straightforward and interesting experience for many students, others found it to be inconvenient and difficult. A key complaint was about breakdown of communication during online meetings due to slow internet connections.

> *'Unfortunately, due to the poor internet connection we were not able to use the voice call facility, so we continued with the text chat only'.*

It seems this problem deprived some students of sufficient opportunity to speak English during the online group discussions, as shown in the comments below.

> *'At the end, I lost internet connection and couldn't re-join the group. I found some difficulty in dealing with the app'*

Some students reported irritation and frustration with the whole group work process. Having found it difficult to keep up with their classmates, their interest and involvement waned.

> *'Some of the girls continued to try and join the conversation but they couldn't, some of them lost interest and left.'*

Surprisingly, even those students who experienced difficulty with the technology were pleased and perceived these issues as a way to improve their learning and trying harder.

'The iPad continued to restart but this made me memorise the steps and be able to use the app better '

In addition to the technical issues, some students had limited experience of using tablets. Although the majority of them were able to use the iPad effectively with ease, some of them found it difficult to operate the device, download applications, and set up accounts.

'My experience with electronics is very limited and I used to wish I could improve my use of it. When we received the iPad I didn't know how to use it, I am not yet good with it but while my development is limited, I am still trying. '

However, some students proved that with practice and collaboration with others, they were able to learn how to use the device and the applications, which enhanced their sense of achievement.

'At the start, using the iPad was difficult for me because it was the first time I had ever used it; and I had difficulty using many Apps including email which I knew how to use on other computers but not on the iPad. I felt that everything was difficult and felt that I could never learn to use it. After using it for a number of days, with some help from my classmates and the teacher, I learnt how to do so.'

Other students exhibited various degrees of concern about the time issues associated with incorporating the iPad device in their learning. Some students reported having difficulties either working with the different apps or trying to solve technical problems.

'I don't know why but I thought I had wasted my time almost two or more hours using the App and at the end I wrote it all on a paper.'

For some students, the whole process was frustrating especially for those who were not accustomed to technology.

'To be honest using the iPad frustrated me and took up a lot of my time.'

Other students also described difficulties they experienced when performing their speaking task. One of the main issues was finding a quiet location to enable them to record their voice; this was clearly a tedious task and one student commented:

'I began to record but my husband was making noise watching football and he wouldn't turn the volume down. I went into a different room and recorded my first attempt but the volume was too low, on the second recording noises could be heard from my WhatsApp'

Students not only found difficulties in recording their voice, but also in performing online discussions.

'I joined Nadia and Ilham at the end; the noise level was very high because I had my nieces and nephews staying with me in the flat and I was disappointed because the voice was not at all clear at my end. If both of them were speaking, I would only be able to hear one. Huda would speak to me every few moments and ask if it was fixed and when I checked, I'd answer that I felt a little like I was not with them'

Another point was perceived by some students as hindering optimum use of the device was the availability of applications. Some of these applications, as discussed earlier in the methodology section, were preloaded onto students' devices. However, some students complained that some of these applications, in particular the free ones, offered only limited use.

> *'The maximum number of attempts for recording is 5 and without realising I recorded all 5. Every time I recorded, it would ask me to speak first. I saved some pictures from Google and uploaded them with comments. I wrote the comments on a piece of paper and my husband helped me a little with the comments. I then read it a number of times and tried to recorded it, but it wouldn't allow me.'*

This issue led to another problem for some students, which was the cost of some applications.

> *'I tried to load other sections using the App 'Speaking pal' but I didn't know if I had to purchase the full copy of it.'*

Therefore, students tried to overcome this problem by looking for similar applications that could be used as alternatives to the one they already had.

> *'Some of the applications have a limited number of uses which I have noticed on some applications, such as the dictionary which gave me 5 opportunities for use before requesting payment before I could continue to use it; therefore, I found an alternative free app and downloaded it.*

A final drawback that was reported by one student is the iPad screen effect on eyesight. She claimed that spending 'too much time on the iPad' had affected her eyes and made her feel tired.

> *'I felt tired from sitting on Google for a long time as the iPad has an effect on my eyes and I have to take a break'*

5.4 Results from Focus Group Interview

Students were invited to attend focus group interview, in which they were asked to reflect on their learning experience both during and after the course through a series of interview questions. Three interviews were conducted in May 2014 during which three focus group interview were conducted during break time, one every day over one week time. The time slot for each group ranged from 60 minutes to 80 minutes depending on students' involvement and interaction. A similar procedure was applied in conducting post study interviews twenty four weeks after the end of the course. Two groups of students were invited to talk about their English learning experience. Other online interviews were carried out individually with three students as they had moved to another university at that time. The other participants could not participate in the interviews due to personal issues.

This section presents the data obtained. The primary focuses of the discussion were their views on the role of the teacher, previous learning experience, and their opinion regarding the integration of technology into

the course. The data collected was analysed qualitatively and coded into six emerging themes, presented in the table below (for further information on the coding process please refer to section 3.12.2).

Table 29: Overview of the main themes from focus group interview data

Core themes (Parent nodes)	Sub-themes (Child nodes)
Past Experience	Conventional Teaching Early English Language Learning
Motivation	
Collaboration	
Reflection on the Improvement of Language Skills	
Teacher's Role.	
Experience with MALL	Positive and Negative Aspects
	The iPad vs. other devices

5.4.1 Findings Relating to the Third Research Question: Motivation towards Language Learning

Past Experience

Conventional Teaching

Students reported their English learning experience at school and during their first semester of university. All those interviewed were perceived as having had negative past learning experiences. According to the students, the main focus of primary and secondary school teachers was to teach grammar and vocabulary yet there was little or no opportunity for communication or real use of the language, as shown in the following.

> *'All they care for is making us study grammar and recall vocabulary yet no one cares to teach us how to speak and use the language outside the classroom'*

Fatin mentioned that she had been taught by teachers whose main concern was passing exams. As she mentioned, she used to be given pre-answered questions to memorise and use in the exam in order to get high marks. However, from her comments, it appears that most students were not satisfied with the way they were taught.

> *'Fatin: During the senior years when the time of the exam was near we would purchase external exam preparation material and we'd find the same questions as in the final exam, they only removed the answer and asked us to simply memorize the answer and write it down.'*

In accordance with what Fatin said, Aseel agreed that memorisation for exams was the norm. Her teacher treated English as a subject to raise students' overall mark and worked on surviving school exams without any attempts to teach them communicative language use.

'It was the same, it was all about memorizing.. During the senior years we were provided with the same exam questions, we solved them and memorized them, and the questions given were the same that came later on, we just sat memorizing them, therefore even now I cannot write.'

Another negative point was mentioned by Mona, who expressed her dissatisfaction with her previous learning experience. She described the teaching style, which was dependent solely on textbooks and never let students express their views.

'we were committed only to what was in the book …there was no conversation, and some students did not like the situation, which resulted in them hating the English language'.

Early English Language Learning

Since the majority felt the classroom to be boring, adopting new learning activities was an attempt to make up for the deficiency of classroom teaching. Ghadeer, for instance, claimed that her advanced proficiency level in English is not related to school teaching. She sought another way through which she was able to communicate in English with native speakers.

Ghadeer: I did not depend on the teacher, hmm no not on the teacher! I used to watch lots of movies.. I feel that I absorbed the language from the movies. even the accent I got from the movies.

Interviewer: What else apart from the TV?

Ghadeer: I used to love watching programme even without the translation.. I used to love that in order to be able to grasp the words.. and also hmm I used the computer CD-ROM's.. my father used to buy them a lot.

Interviewer: Did you try for example to speak with your friends?

Ghadeer: I worked for a year and almost everyone around me was American and as such I had no other option and I was compelled to speak English, that made me speak and it gave me the chance to speak with foreigners.

Resources on the Internet were also used to recite vocabulary and expressions in English. As one student pointed out, YouTube channels were another way to improve her language by looking for new vocabulary and trying to learn it.

Salma: I watched YouTube, I had subscribed to a number of channels on YouTube, and whenever I subscribed, I tried to fetch new words

However, not all students were able to enhance their language input. For some students, such experience seemed to be discouraging and daunting. For Rana, performing these activities did not provide her with any opportunity to practise in communication.

Rana: I used to try watching movies. I used to try to watch movies in order to understand more, then I found it was of no use so I stopped watching them.

Interviewer: Did you give up?

Rana: I was fed up, I saw it was useless and I lost hope in learning English, it was impossible to learn it in the first place.

In addition, support received from family members was also regarded as one of the strategies the students used to enhance their language learning. Taking Roze as an example, early on her parents emphasised the importance of learning English. This provided her with a base upon which she was able to understand her needs and recognise the status of English in her life.

Roze: I started learning English from year one.. and my mom was always interested in laying a good foundation for us with regards to the English language and even my dad had the language.. he always encouraged us to speak in English.. and the English language was something fundamental in our home.

Interviewer: So you used to speak in English at home?

Roze: No not at home but outside.. I mean when we travelled abroad we would use it a lot.

Interviewer: So you consider the language to be important?

Roze: Yes very important.. we need it when we go places and are required to ask questions. Even apart from travelling, when someone hmm speaks to me in English I have to understand in order to communicate with them, and even with regards to education it became an important issue.

Mona was similarly inspired by her family members. They were all capable of speaking English and this in turn seemed to create an environment in which she was keen to pursue the same ability. Her father, for example, laid pressure on her to speak the language in order to improve her learning. Such an environment in her family aroused her interest and motivated her to challenge herself and make more effort to learn English.

'When we were little, my parents focused on the English language so when we were young we knew how important it was. All my relatives grasped the language, everyone did, and I tried to make myself listen to their speech sometimes'

For Sana, her siblings' English experiences were her source of information and the way she was able to improve herself. For her, they were her role models in the family and this impacted her conceptions of language learning.

'At the beginning, my brothers and sisters were of the type who loved to study English as many subjects required the language. So, I started learning with them, and when I reached the junior years I had grasped many words and grammatical rules from them as I had a lot of experience from my family'

Likewise, Sana was influenced by her brother's learning habits. As a result, she was able to form good habits of learning English outside the classroom and being involved in more independent learning.

'I saw my older brother always reading novels, and everything he had was in English, everything he knew was in English, so I tried to imitate him. Because I did not understand all his English books, I went and purchased some books that had a page in Arabic and another in English, and that helped me.'

For Samar, her mother's education contributed to her language learning success. She reported that her mother was enthusiastic about guiding her through her learning and gave her direct instruction.

'When I was young I wanted to learn English, you know really learn.. I used to learn the alphabets and think that I knew English and I was happy. Then, I was miserable that we were not taught English during the primary years, and that was the issue that most affected us. Many of us did not know English since we were young. However, my intention was to know more, to speak English and such, so I started reading English novels, the Shakespeare novels owned by mom and I started being a reader. Whenever there was a word that I did not understand, I would go and ask mom and she would explain it to me'

However, not all students benefited from their family's experience of English as some were the only English language learners in their context.

'When I was young, honestly, I did not know English; I had not attended any courses. Even our family, my father knew a little bit of English, sometimes I used to ask him, and he would answer me with something that was completely the opposite of what was required.'

Motivation

Many students in the focus groups expressed their motivation to learn English. For some, English is the channel through which they can communicate with foreigners, especially when they travel.

Interviewer: Do you want to learn English?

Salma: Yes.

Interviewer: Why?

Salma: It's the language of the world, I would go to Bahrain and such, my cousins would speak…English

Interviewer: You want to learn because of Bahrain?

Salma: No, not because of Bahrain, for myself…I mean if someone speak to me in English I would be able to reply.

The same view was shared by Roze, whose main driving forces to learn the language was the ability to use English for communication and for academic success as well.

'Yes, it's very important… we need it when we go places and need to ask any questions and with everything we need to use English…and other than travelling, I need it in case someone hmm speak to me in English to be able to understand her in order to communicate with her, and even in education it has become something important.

Lama and Sana gave a different reason for their interest in the language. For them, learning the language was personally relevant as they did not want to feel that they were inferior to either their family members or their classmates in terms of their ability to use English.

Lama: At the beginning… when I used to study, like the teachers said it was not a lot and they used to speak more in Arabic… then I got married and so I left my studies and forgot everything mmmm and after some time almost all of my brothers went abroad... and when of course we came to contact them, all of them spoke in English except me!

Interviewer: You felt you were different!

Lama: Yes, I did not understand what they were saying anymore…and I tried a little bit and my brother used to speak with me in English…he told me don't speak in Arabic with me, and when I went home to my family we used to speak in English... they spoke in English, and a little at a time I started to understand what they were saying, then when I spoke... I spoke in English, and they started making fun of me.

Rana: At the beginning I used to love learning English, when I went to high school I saw girls who knew English, everyone was speaking in English...when I saw someone speaking English I said I wish I could be like you and I used to say to myself I have to learn, I am as good as them.

For others, though, English was not one of their priorities at the beginning; their interest was fostered in part by their sense of academic achievement as well as its necessity in order to follow the major courses they were being taught in English.

Fatin: For me, English was not amongst my interests, I continued when I was young but I wasn't interested... then I found out that I had to learn it to succeed at school.

However, after the course, many students reported positive learning experiences reflective of an increased intrinsic motivation to learn the language. An example of this is evidenced by Samar and Shahad, who reported their feeling of satisfaction and enjoyment when learning English in the new format.

Shahad: I came to want to learn a language, grasp a language: I mean the English became very important thing to me, something that feels fun to learn.

Many students emphasised that the iPad-assisted language learning course had offered them something different from what they were used to having. For example, Nema expressed her enthusiasm for attending the English class, which reflected the change in her motivation.

> *'I feel more ready now, I am motivated towards something new, but before I felt normal during the first term, I felt that it made no difference if I attended or not, I mean we normally sit and listen to the teacher. In this course, I felt that there is something new, I mean there is a difference, there is a motivation.'*

The same feeling was shared by Sana, who explained that due to the new intervention she had become more motivated to learn. She had become more interested in the language and this in turn had increased her desire to make more effort.

> *Sana: I started to try more, I love trying to work through with the VoiceThread app. for example, I loved working on the topic and discussing it..*
>
> *Interviewer: You mean your motivation increased due to the iPad?*
>
> *Sana: Because the iPad course made it easier for me to communicate.*
>
> *Interviewer: You mean the device made it easier!*
>
> *Rawan: Yes, I mean that I felt that studying became exciting and not boring like before, now I like collaborating and communicating.*

This change is also noticeable in Ghadeer's comments. She claimed that her own methods of language learning had changed, and she had become more responsible for her own learning.

> *'It changed a lot.. I mean before it was like I told you.. I did not focus on studying nor on the book.. even if they told me to pick up the book and study I was not able to study ever.. yet to talk.. but now with the iPad I love logging in.. I love handling it.. at any time while sitting at home at my leisure I can find any homework and complete it with ease.. I mean before that if they told me to pick up the dictionary and keep searching [laughing] it would have been hopeless.. it was impossible.. now I can easily use the dictionary by just writing a word and I find it instantly... and more than one meaning too.. so it's very easy to learn in this way. I mean it's benefited me so much...'*

In addition, students claimed that they started to be more independent and sought out opportunities for learning English, such as by searching the web, reading new books, and doing homework.

> *'Now I search for the information, while at first I was used to having it delivered to me, now I search, and when I search for it I can learn it more easily'*

Students also claimed they had taken responsibility for their own English learning and were making decisions about their learning. For instance, many reported how they began to take the initiative in using their iPad for learning without the teacher's help.

> *Jood: We started to learn ourselves and came to love it…to depend on ourselves.*

In relation to this, Dana described her experience of learning English after she left the college and stayed at home. She reported her use of iPad-based learning activities, such as self-quizzing grammar games, as well as speaking and listening activities.

Interviewer: Ok did you extend your use of the iPad after I left?

Dana: Yes, I did install some apps that teach the English language and grammar... and also the quiz apps and such…

Interviewer: Ok do you have any example of any apps that you installed and used?

Dana: Yes... like 'Learn English' and 'Speak English'.

Interviewer: Ok why do you practise? What is the reason? What is it that you aim to enhance exactly and wish to improve?

Dana: Nothing in particular… I only wish to enhance my confidence in everything by speaking a little bit! I mean... if I repeat the word being said I feel that my pronunciation gets better?

Furthermore, one of the most important concerns when conducting this study was to know whether students would continue developing as autonomous language learners after completing the English course. As we can see from the following extracts, students claimed that they continued using the iPad to learn English after the end of the study.

Interviewer: Ok when I left…did you continue using the iPad after we finished the course?

Mona: Yes, I did... I used it in the projects.

Salma: We did so... for example when we used to explain something... the iPad helped us and the such.

Interviewer: Ok ..did you use it at home? And did you create a group discussion?

Mona: Yes... Me and Shahad…

Interviewer: Ok when you used it with Shahad… did you find any difficulty that I wasn't around to give directions like in the beginning? Like when I was with you?

Mona: We got used to it… at the beginning we did not use it all the time…mm we used it a little bit at a time... but now everything has changed...to be honest...at the beginning...I did not like using this method… for me...it was a little bit complicated but with time I changed my mind…it became easy to us.

Sana: It became normal without the presence of the teacher. Even when we found something hard…we started asking each other about it.

Other students claimed that they integrated English learning with the iPad into their routine.

Sana: I've become addicted to TED app... to try and learn the English language correctly…and speak like natives do... I watch it everyday.. everyday I'd listen to them.

Another important aim of the present study was to investigate whether the student's new skills and the perceptions they had acquired during the course would be transferred to other subjects. Findings from the focus group interview revealed that most students carried their knowledge of using the device to learn language into other subject areas. For instance, some students found the iPad to be more accessible and

easier for creating slides for their different projects. They used different applications such as Keynotes and Prezi in order to complete their tasks in courses other than English. This point is exemplified by the following responses:

> *Interviewer: Did you use it for other subjects?*
>
> *Salma: For the study skills subject, she asked us for a presentation and we created it for her.*
>
> *Interviewer: Which app did you use?*
>
> *Salma: Prezi, we worked at home*

Moreover, some students were very enthusiastic about using the device in learning to the extent that they passed their knowledge to other learners, such as family members and friends. One student stated:

> *'For me, I took all the apps I learned here and taught them to my brothers, I taught them how to create PowerPoint presentations and how to search for info with their peers while at home... and my project was about communication skills, it was me teaching my peers from other classes, many benefitted, it was an effort'.*

Overall, comments from the students indicate that the majority experienced a positive shift in their motivation after the course.

5.4.2 Findings Relating to the Second Research Question: Collaborative Learning

By using different applications such as Voicethread and Ask3, students were able to participate more in group work activities. The following comments illustrate this point.

> *Shahad: I can speak with her online, I can show her what I want…for example when we have an exam… I can explain and such… I can show her my presentation...mmm and any image and point to it.*
>
> *Huda: it did save us time…and most importantly… I feel that we are together and I can see everything that my friends are doing… it made the tasks much easier... to the extent that without that application we might have needed a month to finish.*

The power of group learning is seen not only to enhance participation but also to be beneficial in terms of bringing pressure to other students and increasing the level of challenge among them.

> *Interviewer: Ok and did you like the idea that people might hear you speaking?*
>
> *Dana: Not the first time [laugh].*
>
> *Interviewer: Ok and afterwards what changed your mind?*
>
> *Dana: Afterwards I got used to seeing girls sending more than once…so I started to say why don't I give it a try…why not me…I came to see you commenting on the girls' work… and when one made a mistake and you commented… she would correct it and send it again... so I told myself …there is no*

difference between us so I started to try… this encouraged me and gave me like a push...why not…why don't I do it like the other girls.

Some students changed their point of view about group work and became aware that they could learn from each other.

> *Ghadeer: To be honest…at the beginning… it was not suitable for me…I used to prefer being alone, and even after creating groups I still did not understand anything... but my group taught me and made me love it.*
>
> *Interviewer: You came to love the groups?*
>
> *Ghadeer: Yes, they gained experience from me and I from them…this means it helps you and makes you love to enter the groups. If I did not know something…I used to ask my group members whether Huda or Nema, and they used to answer me directly…and the same went with them if they did not know anything they would ask me, so there was real teamwork…I used to receive from them and at the same time they used to receive from me and help me... it was a teamwork where everyone assisted each other, and this thing really helped you learn.*

5.4.3 Findings Relating to the Fourth Research Question: Motivation towards Tablet Devices

Reflection on the Improvement of Language Skills

In terms of benefits for English learning, most students found the iPad-assisted language learning to be more effective than the traditional teaching and learning. It was particularly valuable for supporting students' listening and speaking practice. One student explained:

> *'For me the iPad was better for sure… to change the learning routine we were used to… I love that I can hear the listening at any time.. not like before when I was restricted to the class ..and I like the feature of testing my listening…while before…no one cared if we improved ourselves'.*

In addition, the majority of students reported a change in the practice of their spoken English. Prior to the study, they reflected that they were unwilling to speak in class or participate in any communicative activity. They explained, however, that they had gradually started to change their ideas about learning; they became less self-conscious and more adventurous in presenting themselves to others, as can be seen from the following extract.

> *'At first, of course, I did not have the courage to speak in English. I did not love my voice at the beginning, yet it was ok as time passed on, and my courage increased a little bit at a time and I gained more experience.'*

Shahad also expressed her satisfaction with the progress she has made. She believes that being able to speak with native speakers has meant that she has reached a higher level of the language. In other words, making herself understood without the need for using hand gestures and facial expressions became possible.

Shahad: There is a good improvement, for example I have a game, sometimes foreign people log in, I am glad to understand what they are saying and communicate with them.

Interviewer: Is this related to our project? How did you benefit from our project and what made you improve to the extent of communicating with native speakers?

Shahad: Yes, it is related.. the project taught me a lot.. how to communicate with others without trying to act what I want…I mean before…to explain to someone in the market I had to use my body language for them to understand [laugh]… but because I got used to speaking while doing the homework with my peers …without them seeing me it became normal to deliver my speech using voice only.

In addition, some students believed that one reason for her progress was the immediate feedback they had received either from the teacher or their peers which encouraged them to involve more in group-related activities.

Dana: they always comment on what I say so I've become more encouraged to learn from my mistakes, and the teacher used to comment on me and correct me directly, not like the test where I had to wait for a month to know whether I was correct or not.

Other students explained that they were able to compare their own content with their peers' pronunciation, vocabulary, and sentence arrangement. Such a strategy helped them to notice their own mistakes and make appropriate changes.

Sana: When we spoke there at Fuze or Ask3 we did practice, and we now listen to the opinions of others, or at least the comments of others, this helped us a lot.

Sana: It also helped us to compare the pronunciation or the sentence with our classmates, or with someone who is better than us, or not exactly better but someone who knows the word better than us.

Mona: Yes, at first when it came to English I used to only listen and that was it… I did not use to like speaking.. but not anymore, it's different now.

It was worth mentioning that some students admitted that their progress was slow and gradual and that they were aware that it takes a long time to improve competence in speaking and listening. However, they believed that the iPad-aided learning was helpful to their language learning and contributed to the positive changes they experienced during and after the course.

Salma: Indeed, we improved, but not to the extent that we are 'wow', no of course nothing comes to the 'wow' level within three months, but I mean that if it is a simple improvement, at least I now speak more, for example I like to read more now, a normal improvement... it does not have to be big.

Nada rejected exam results as a criterion for evaluating her performance in her level of English. She felt that even with just a modest improvement in exam performance, she still believed that she had had a successful English learning experience.

> *Nada: I did improve, but in a gradual way and not a leap... I feel that my marks have only increased a little, but that does not mean I am not improving, it just doesn't happen like that it has taken me years to learn a language, so now I have improved within three months or so, it has to be gradual'*

Teacher's role

Students in the present study considered the teacher to be an important element in their success in the course. The majority perceived the teacher in MALL courses necessary to provide proper guidance. As pointed out here by one student:

> *Interviewer: So for you..is the presence of the teacher important?*
>
> *Zena: Yes, I feel her presence is important because we cannot make it without her. For me the presence of the teacher was a basic thing at the beginning of the course... to introduce me to the device, and if the teacher was not there.. the device would be useless because we wouldn't use it or even try it.. and benefit from it…we would say we don't know this we won't try it, we would turn it off. It differs when someone else is teaching us and motivating us, we needed someone to explain the benefits so we could make use of it.*

It was suggested that the teacher's direction was especially crucial in the first stage of the course.

> *Interviewer: So for you the first stage was very important, the training stage?*
>
> *Jood: Yes, the stage of preparation, as for the course…we'd had iPads before, yet we did not know, we did not know that such apps exist, but now not anymore, we have these apps and we search for similar ones, and we hope to improve more*
>
> *Salma: So the first stage was important, we moved to the stage where we did not depend on the teacher, let us say more correctly that now that it is over... I can work on my own, meaning I can do it myself, if you gave us homework or anything, we could search for it.*

Other students asserted that the teacher's guidance was an essential part of the course without which it would have been impossible for them to make progress. Choosing suitable applications from the tens of thousands available would be a very challenging and difficult task.

> *Interviewer: Do you think that the presence of the teacher is a basic part of the educational process or do you feel otherwise? Based on your experience?*
>
> *Nada: Indeed, it's a basic thing in the first part, as when you put us on the first steps and then we continued… because without the teacher we would not have known the apps nor their uses, I mean frankly I had an iPad but I did not know that there were useful apps for me…because there were thousands of apps so how could I choose from them.*

Experience with MALL

Positive and Negative Aspects

Data from the group interviews found students to have clear views on how they benefited from using the iPad. Many mentioned they valued the ability to access their learning materials anytime and anywhere.

> *Interviewer: Where did you use your device? And were there any barriers that prevented you from using it?*
>
> *Rawan: Anywhere it was normal at home or in the car.*
>
> *Interviewer: Then there were no barriers to your usage?*
>
> *Samar: No even at the Corniche, we would use it.*
>
> *Interviewer: How did you use it, with the Internet connection or without?*
>
> *Rawan: There was Internet available.*
>
> *Interviewer: Oh, did you connect it to the mobile! Was the internet available all day!*
>
> *Shahad: There were Apps that worked without internet.*

Dana agreed on this point as she appreciated the portability and ease of use of the device.

> *Interviewer: Do you use the devise only at home or would you take it with you when going outside?*
>
> *Dana: Yes, if I went to my family's place because the lighter items are easy to take with you everywhere… even if the battery was dying you could recharge it using your iPhone.. many things became easier for us.*

Salma also added that she used the many affordances of her device to complete her language tasks. For instance, she reported replacing her electronic dictionary with a dictionary app that is integrated within the device.

> *Salma: Yes, the dictionary is too large to carry with the books, the device itself has the book and the dictionary. So, I have the dictionary and my book and video all on the same device.*
>
> *Interviewer: Who had an electronic dictionary?*
>
> *Samar: Me.*
>
> *Interviewer: Do you still use it now, or did you give it up when the iPad came?*
>
> *Samar: I don't use it, the iPad has the dictionary.*

Other students valued the off-line use of the device, which were used with certain applications that had been downloaded by their teacher. According to many, such a function enabled them to find information relevant to their course without having to depend solely on their teacher and classmates.

> *Lama: I love it because sometimes when I was absent I logged in late and could get any information I wanted. Even if some of the girls sent a message through WhatsApp, we would be asleep.*

Moreover, introvert students found the device to be more appropriate to their needs.

> *Roze: I liked that we are able to use the device even when we're not in the class, when at home, when we are in different places we can still gather and connect, this is better than being face to face. I like the idea that we can do the same task that is possible inside the university, yet being outside at anytime.*

> *Nada: Even if it is during the night.*

Ghadeer, who is among those who were satisfied with the MALL course, associated her positive experience with the interactive nature of the course through which students were able to negotiate, discuss, and contribute more than before.

> *'hold an iPad and other apps... you have to love it... you love to use it and love to learn. I mean it is not like just sitting for 12 years on a chair like that [laugh] and you only receive and receive, no one tells you stand up and do this or that… or come on and speak with us… or or or…you just sit and receive... a receptive all the time... but with the iPad it made us collaborate and speak even when at home.'*

As for the iBook use, most students appreciated the new form of their textbook, which enabled them to extend the capabilities of the existing textbook. For example, Nema felt that the iBook presented her with extra features beyond what she had had before.

> *'I like the point that I can listen before answering even if more than once and at anytime.. because I can listen to it anywhere. Also, I like the correction feature.. and I also liked it because I was able to write in the margin, I mean to write any notes and sentences in order to remember them.'*

Mona also preferred the iBook which gave her instant feedback and corrected her mistakes.

> *Maria: Honestly, I was able to use the electronic book and train myself using it, then if I answered something wrong, I could see the correct answer, and I could retry it a number of times.*

Shahad added that she appreciated the function that allowed her to zoom into the content and enlarge the font. Such a feature facilitated the readability of the iBook. According to her, the iBook gave her more reading comfort than the printed book.

> *'The book sometimes had small font that was not clear, sometimes when I saw long texts I would say they are too long and I won't be able to read them, so I liked the ability to be able to enlarge the font and read it.'*

Moreover, Dana revealed that she preferred the audio notes on her iBook which allowed her to record her notes and benefit from both the information and the pronunciation of the words.

> *'I like that the notes can be recorded using my voice instead of writing them down and that I can record and listen to them whenever I like.. Usually, I forget the pronunciation, so if I write a note down I might not remember the sound if I did not record it.. this saved me lots of time, as at first when I wanted to*

review the pronunciation I had to look it up from the dictionary, but now that's over as I have my notes recorded.'

On the other hand, the students reported their negative experience with the authorities in terms of the use of the iPad inside the classroom. After the course, students' iPad devices were banned in the class due to a policy that prohibited the use of the camera. Although many students reported their attempts to convince the college authority of the benefits they could obtain from using such technology and their willingness to block the use of the camera, it was not approved.

> *Zena: at the university we were not allowed to take it in as it had a camera.*
>
> *Interviewer: So it was the rules of the university that prevented you?*
>
> *Zena: Yes I don't use it because of the rules, and if we were to use it there we would benefit more.*

Overall, the majority of students valued the new intervention course and expressed their preference to such a course over the traditional teaching method.

The iPad vs. other devices

Further evidence from student interviews revealed a preference for the iPad device over other forms of technology such as laptops and smart phones. Students gave different reasons for their choice including portability, accessibility, and interface as presented below.

The point that most students agreed upon was the portability of the device, which enabled students to access information in situations where a laptop would not have. For example, Mona mentioned that she had replaced her laptop with the iPad, which she began to use more due to its convenience.

> *Mona: 'I honestly neglected my laptop, I am always using my iPad and whenever I go out I place it in my purse, and even when going for long trips like when we visit my aunt in Riyadh I usually take it with me to play or to study, that's all I do during the trip.'*

Dana cited the same reason but she added an interesting point. She believes the iPad is more appropriate in public places, unlike the laptop, which is more conspicuous and can draw attention. In fact, she stated that she felt self-conscious, or even embarrassed, when using her laptop in public or the classroom.

> *Dana: if I use the iPad in front of people it's normal, yet if I use a laptop everyone would keep staring at me.*
>
> *Interviewer: Interesting, so you feel embarrassed if you bring out your laptop to learn English while if you used your iPad or mobile no one would notice.*
>
> *Dana: Yes, it's normal especially because everyone has them, not like the laptop. For example, you feel that if you bring out your laptop, as if there is something wrong, like they would say: what's made her bring out a laptop, is she coming for business?*

Besides portability, some students found the iPad to offer more flexibility and ease of use. Many students claimed the iPad facilitated their listening practice through the added durability and ease of loading, which they felt was quicker than that of a laptop.

> *Aseel: to take the laptop means having to take it with a headphone and a charger and the such.. No, the iPad can be used even when sitting in my bed.*
>
> *Interviewer: Ok, so what you love about the iPad is it being convenient and lightweight, ok anything else?*
>
> *Jood: Yes in the bed or anywhere, anytime. The laptop you have to turn on to listen, restart it then listen. This is not the case with the iPad, you just press a button and it's working. That's why loved it, it's lightweight, and can be used anywhere and at any time.*
>
> *Shahad: With the iPad, I can open any page without the device freezing.*

On the other hand, when students were asked about the use of smartphones, many thought that the use of the iPad was more beneficial due to the better interface. In particular, they cited the large screen size, as can be seen from the following extracts.

> *Interviewer: What about using the mobile?*
>
> *Salma: It would be hard as the mobile has a small screen and there are not the same options available as in the device.*

Finally, most students believed that the device fitted more easily into the flow of the class tasks than laptops or personal computers. They attributed this to its flat screen design that enables reading from different angles. Most also mentioned that they appreciated not having to share their screen or go to the language lab every day.

> *Interviewer: With regards to the discussions that would take place inside the class, did you find the device to be a barrier by any means?*
>
> *Jood: No, it was helpful.*
>
> *Interviewer: It was helpful, how?*
>
> *Ghadeer: Because this has a flat screen, the visibility is easier.*

5.5 Log File Data Results

Results from the screen captures obtained from the log file data are used to confirm what students reported in their diaries, focus group interview and questionnaires. Therefore, in the following section, an attempt is made to examine how students carry out different tasks via the iPad device. The section is divided into three parts: the beginning of the course (week 1), during the course (week 4) and by the end of the course (week 8).

Week 1

The log file suggest that students used their iPads both inside and outside the classroom for vocabulary and grammar exercises posted by their teacher on the iTune U course using the Pages App. In addition, the log file provided evidence that they downloaded grammar and vocabulary language-learning apps other than the ones were provided, and appeared to read English books, and watch programmes in English as can be seen from the figure below.

Figure 7: An instance of a student appearing to read an online book captured by iKey Monitor
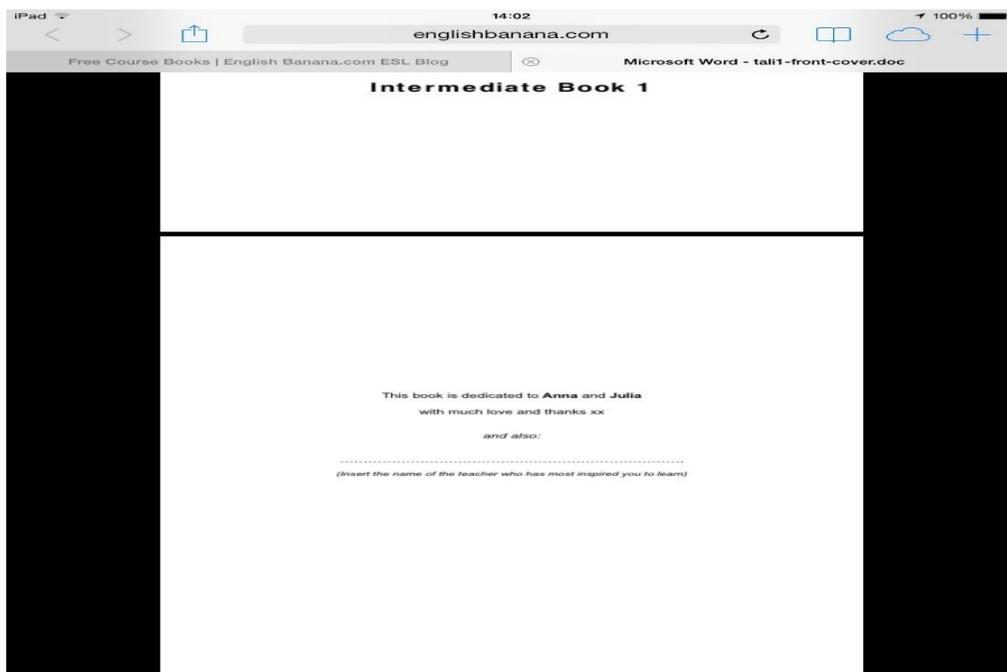
Furthermore, the Internet seemed to be used outside the classroom to access the iTune U course materials, read online, watch movies, listen to English songs and visit websites of personal and educational interest.

For example, the figure below indicates that a student appears to be looking for information on a course topic.

Figure 8: An instance of student's online activity captured by iKey Monitor

What was suggested from these log file is the continuation of student activity even during their weekends. Over the first weekend, students appeared to use their devices at different times of the day to accomplish different tasks, such as working on their homework, writing diaries, watching App tutorials, revising their answers, and viewing other students' answers using diverse applications which include Ask3, iTune U, Safari, Pages, SecretDiary, and YouTube.

Figure 9: Instances of students working on their homework as captured by iKey Monitor
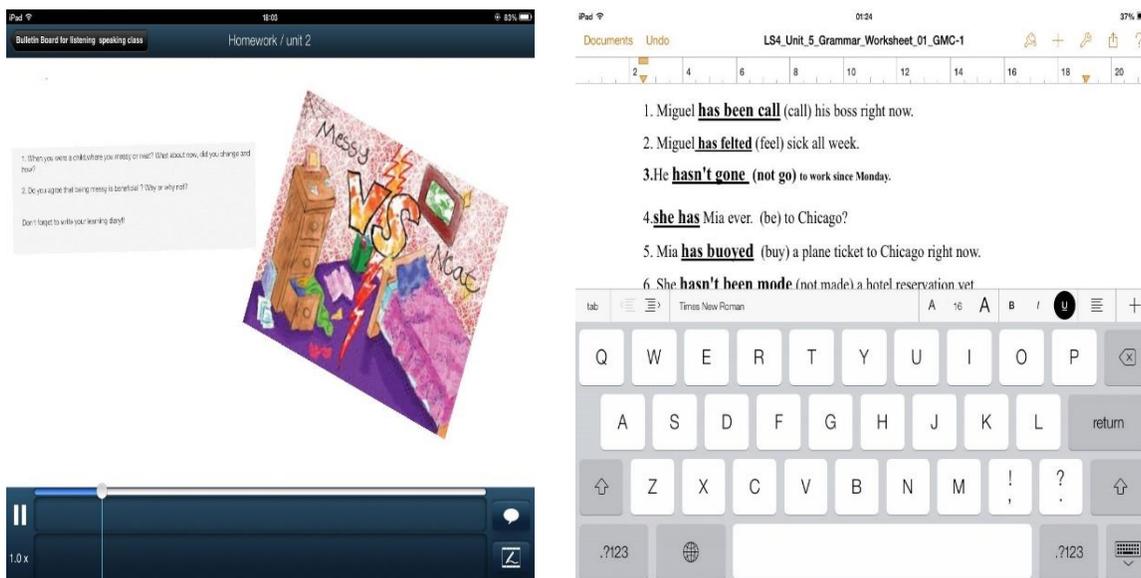
Week 4

As the course progressed, the log file data suggest that students appear to use their devices outside the classroom as a means to communicate with others and ask questions. For instance, several screenshots indicate that students used instant messaging apps such as BBM to ask for help. Furthermore, students seemed to use such apps to chat with their classmates about topics related to the lesson covered.

Figure 10: An instance of a student's communicative activity captured by iKey Monitor

The log file indicates students' use of their iPad to arrange group work activity. For example, many students appeared to use different apps such as Ask3, Fuze meeting, and Mail to post questions either to the teacher or other peers related to the course as can be seen below.

Figure 11: An instance of the teacher's feedback captured by iKey Monitor
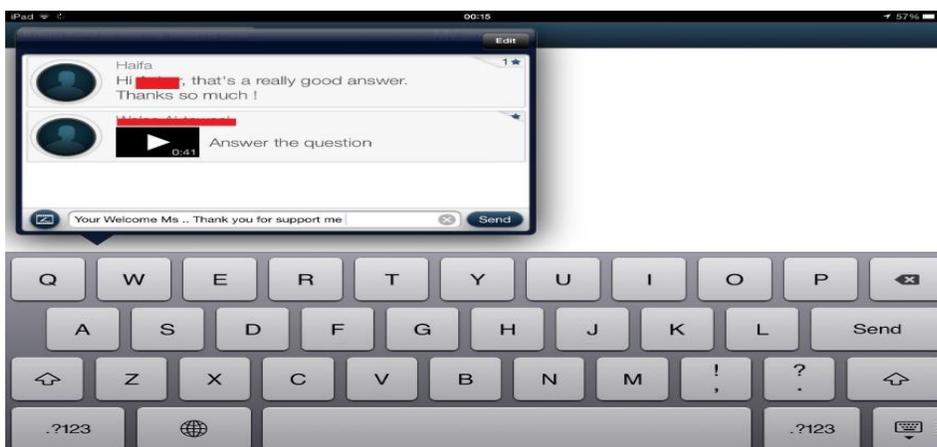
Another point worth mentioning is the use of the tablet device as a new channel for students to share thoughts and gain support from each other. The log file showed students' use of different applications such as Voicethread and Fuze to meet outside the classroom, communicate with each other, and arrange an online group meeting to discuss and revise materials that had been covered in the class.

Figure 12: An instance of students' online meeting captured by iKey Monitor
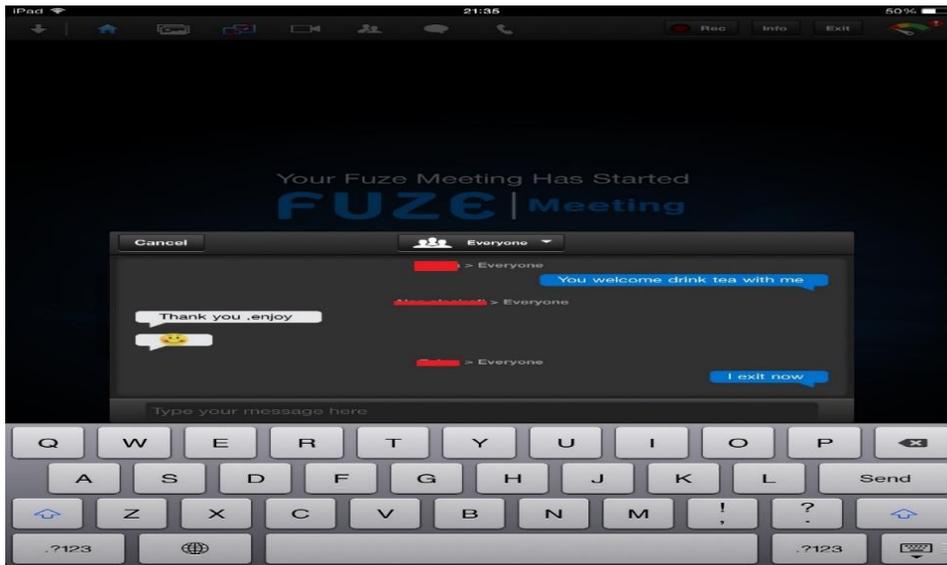
Another form of communication was demonstrated in the use of an email app. Students seemed to exchange emails to communicate with the teacher and other students about issues related to their tasks, to ask questions about an assignment or exam, to arrange a meeting, and to exchange course materials. The following figure illustrates this point.

Figure 13: An instance of a student sending an email for educational purposes captured by iKey Monitor
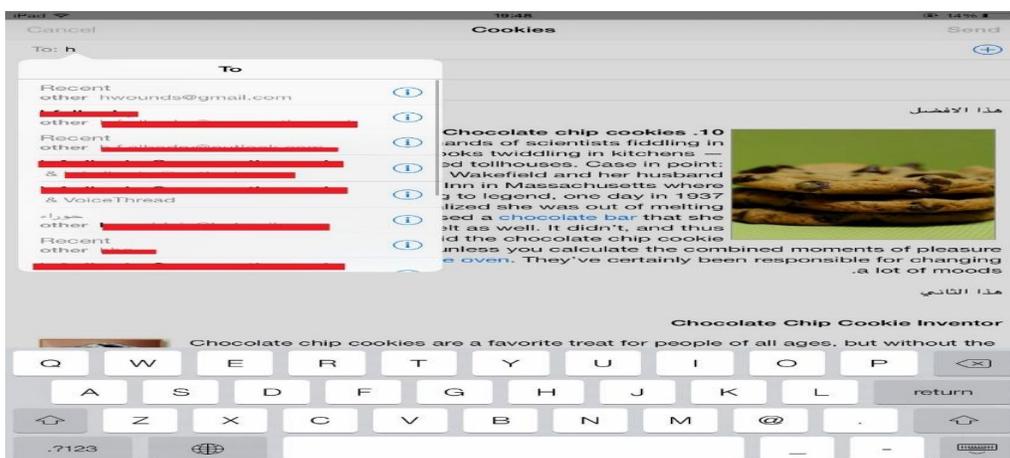
However, it was noticed from the log file that students used some applications such as BBM during the classroom to communicate with each other and with friends and family for personal purposes. For example, several screenshots showed that different students were chatting about issues not related to the lesson, such as personal issues, preparing for a party, and arranging a timeout. Despite the teacher-researcher's best effort to disable the game centre and social networking app, students found ways to download other apps and used them in an informal setting without being noticed by the teacher as can be seen below.

Figure 14: Instances of students playing and chatting on the iPad captured by iKey Monitor
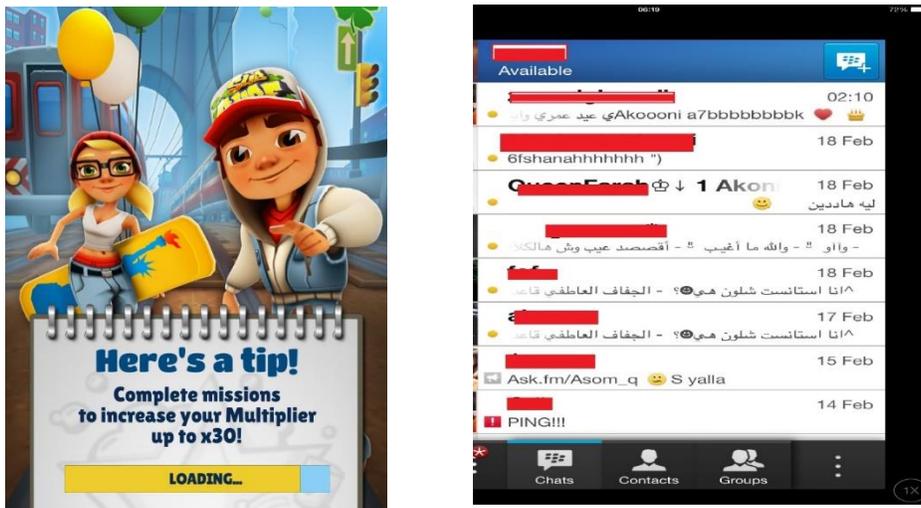
Week 8

By the end of the course, and after weeks of guidance towards working collaboratively in groups, and engaging in group discussions whether in or out of the classroom, evidence from log file data suggested that students were using different applications on a daily basis outside the classroom to discuss things related to their course. For example, the screenshot below indicate that students seemed to use their iPad device to prepare for a group work presentation.

Figure 15: Instance of students' group work preparation captured by iKey Monitor
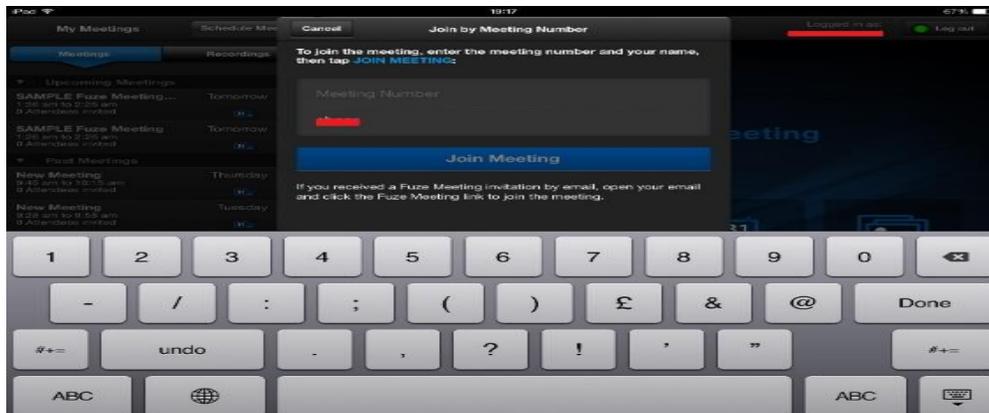
Figure 16: An instance of students' group work presentation slides captured by iKey Monitor

Another point worth mentioning is the variety of ways in which the iPad applications were used for educational purposes. At the beginning of the course, most of the log file data indicated that students focused mainly on the course text book content and the applications introduced by the teacher. As the course progressed, the data indicated that students started to look for other applications to complete language learning tasks. For example, the following screenshot shows the number of applications installed by the student which suggests that their learning was not merely related to the teacher's instructions but involved their own choices and individual goals.

Figure 17: Screenshot of installed application tracked by Meraki software

Furthermore, several instances of the log file data showed that students seemed to use different applications such as Ask3, Dropbox, Voicethread, Mail, and iTune U Course to receive feedback from their teacher on their work and to view teacher's feedback on their peers' work at the same time, as can be seen from the figure below.

Figure 18: An instance of teacher/student interaction captured by iKey Monitor
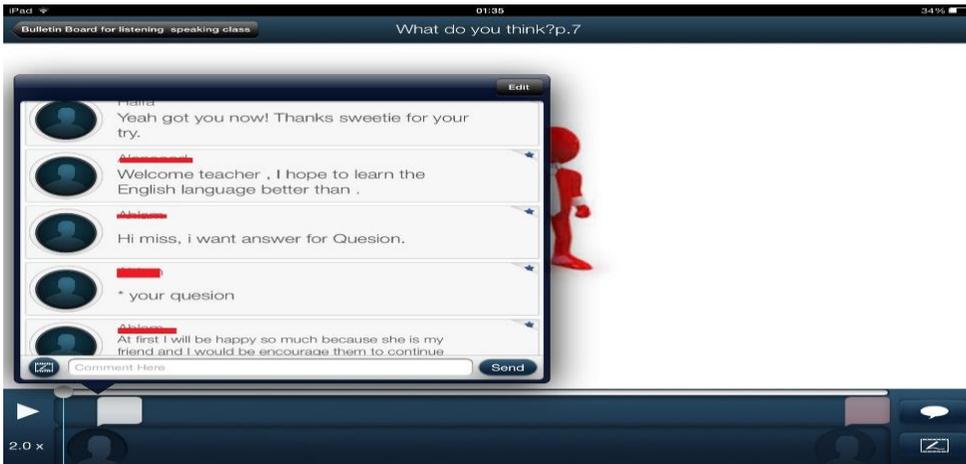
In addition, analysis of the log file data suggested that most students appeared to carry their knowledge of using the device to learn language over into other subject areas. The log file showed that there were instances where students used applications such as Keynotes, Prezi, and Movie Maker in order to complete their tasks in courses other than English. For example, the screenshot below shows a student working on her assignment for another subject using the Movie Maker app.

Figure 19: An instance of a student's IT work captured by iKey Monitor

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5.6 Summary

This chapter presented the findings which emerged from the qualitative data gathered using the think aloud protocol, the student diaries, the focus group interview and the log file. The results of the qualitative analysis provided an explanation of how students' learning strategies and motivation could be influenced by the integration of tablet-assisted language learning. Findings from TAP data, which was related to the first research question, indicated students' use of a variety of strategies. The cognitive and metacognitive strategies were used more frequently than social and affective strategies. The findings concerning the students' collaborative learning, their motivation towards language learning, and their motivation towards the use of the iPad device were derived from student diaries, focus group interview and the log file data. The analysis indicated that students worked collaboratively with classmates in and outside the classroom. The students highlighted the importance of working together, the value of feedback from peers and the teacher, and the importance of interaction. In addition, the significance of the teacher's role as a facilitator was also highlighted. The analysis of the data collected from the student diaries and focus group interview suggested an enhancement of students' motivation to learn English and towards using the iPad device for language learning. Data showed that the iPad device served as a means by which learners facilitated their language learning, gained access to different resources, obtained different information, had access to learning materials, and accordingly achieved control over their learning. Furthermore, there were practical themes concerning technology issues encountered by the students during the course such as the issue of time management, internet breakdown, and the cost of applications. The next chapter will elaborate on these findings and the results will be discussed in relation to existing studies.

Chapter 6: Discussion

6.1 Introduction

This chapter presents the interpretations of the quantitative and qualitative data and relates them to the border literature and the theoretical framework of the study. The chapter addresses the main research objective of investigating the extent to which learners' language learning autonomy can be encouraged in a teacher-guided EFL course through the integration of tablet-based activities. The research has especially focused on whether incorporating iPad and iPad-like devices into a language course brought about changes in the way students learn, or indeed their perception of language learning in relation to their autonomous learning. This was achieved by bringing together data reported by students in a number of ways: in their learning diaries, in focus group interview, and through think aloud protocol and online log file, along with quantitative data obtained from questionnaires. The chapter is divided into four sections based on the four main research questions and associated sub-questions, which constituted the focus of this study.

Main research question:

What evidence is there of Saudi students' autonomy in their approach to learning English as a Foreign Language?

In order to answer the main research question, the issues raised in section 2.6.1 The Difficulties in Assessing Learner Autonomy, which relate to the difficulties in assessing learner autonomy, were first considered. As discussed earlier in this thesis, autonomy is not an absolute concept nor a single behaviour. Rather, autonomy is a capacity that cannot be demonstrated by all learners in the same degree and is in fact a multidimensional construct that can take on different forms and dimensions. Such an argument has guided my interpretation of the concept of learner autonomy. Throughout this research, I have tried to formulate my understanding of the concept by considering the different interpretations and definitions of the concept and identifying four main components as indicators of students' developing of learner autonomy. Findings of this research indicate a number of behaviours and practices, which were shown to be linked to the concept of students' language autonomy. Namely, language learning strategies, collaboration and interdependence, motivation and attitude, and control. These four components will be discussed separately based on their relevance to the research questions.

Research question 1

What language learning strategies do students appear to use during the course and how do these change as the course progresses?

6.2. Students' Language Learning Strategies

Data collected from questionnaires, think aloud protocol, and student diary revealed that student autonomy is exhibited through the use of different learning strategies in order to learn the target language. After engaging in the course, students appeared to make use of a variety of strategies to support their language learning, as evidenced by the data. Analysis of the quantitative data (SILLG questionnaire) revealed that prior to the course; students used the three strategy types at a medium level with a mean score of 3.2. These results replicate those of Almutairi (2008) who also found a similar medium frequency of use of LLSs by Saudi students.

The patterns of LLSs use indicated that social strategies were the strategy type whose use was most frequently reported before the course with a mean score of 3.3. Such results contradict what students reported in the interviews, which was that, due to social barriers in the Saudi culture, English use and practice is limited to the classroom. Furthermore, conventional teaching methods, where the main focus was on teaching grammar and vocabulary, contributed to students' lack of opportunity to communicate or use English. One possible explanation may be students' attempts to find opportunities to learn and use English outside the classroom. For example, in the focus group interview, many students spoke about their attempts to make up for the deficiency of classroom teaching by seeking other ways through which they were able to communicate in English. Activities included speaking with native speakers at work and communicating with their family members to enhance their spoken language (see section 5.4.1, Early English Language Learning).

Another possible explanation can be attributed to students' high ownership of mobile devices. In the BQ, 95% of students reported that they owned a mobile phone and 85% owned a laptop with an internet connection, which indicates the importance of technology in Saudi society. About 94% of students reported that they used their tablets to communicate with others, 44% asked questions and 55% sent messages about the course content. However, this does not necessarily mean that such activities were conducted in English. They may in fact have relied on using Arabic or code-switching rather than using English. Therefore, students' claims of using social strategies for language learning as the most frequently used strategy type may be accurate yet must be treated with caution, particularly due to other findings in the current study which draw a clearer picture of students' LLSs.

After engaging in the tablet-assisted learning course, students appeared to make use of a variety of strategies to support their language learning, as evidenced by the data. The pattern of responses to the SILLIP questionnaire and the data from interviews and diaries were generally consistent. Statistical analysis of the SILLIP questionnaire indicated a high frequency of use of learning strategies by the students three weeks after the start of the study with an overall mean score of 3.5.

As the course progressed, students' reported use of LLSs increased significantly when dealing with the MALL tasks with a mean score of 3.6. To illustrate, statistical analysis of the SILLG questionnaire twelve weeks after the start of the study revealed a statistically significant difference in the frequency of strategy use pre- and post-study (p = .000). In addition, twenty four weeks after the end of the study, students' reported use of LLSs had continued to increase over time with a mean score of 3.9. Results indicated a statistically significant difference in the frequency of strategy use post the study and twenty four weeks after the end of the study (p=.000).

One possible explanation for this result is that the students were more exposed to the different methods of using the tablet device in learning English than before. Students appeared more aware of the different opportunities available to help them acquire the target language. Accordingly, students seemed to develop a combination of language strategies to help them achieve a successful outcome. Results from the log file data suggested that students may have exposed themselves to English. For example, students seemed to start looking for other applications to complete language tasks (see Figure 17). This suggested that their learning was not merely related to the teacher's instructions but involved their own choices and individual goals. Furthermore, the log file data indicated that students continued to learn even during their weekends. On those days, students would use their devices at different time of the day to accomplish different tasks such as working on their homework, writing diaries, watching App tutorials, revising their answers, and viewing other students' answers (see Figure 9). These findings suggested that incorporating the tablet- assisted activities into the course may have influenced students' learning methods and encourage the use of a wider range of strategies. As Song and Fox (2008, p. 311) stated, '*It is not the technology itself, but the students' use of the technology that can change learning practices*'.

A further analysis of the quantitative data provided evidence that students made a high frequent use of metacognitive strategies. The reported high frequency of metacognitive strategies use among Saudi students can be seen as in line with the findings of other studies (Razak, 2000; Oh, 1992; Mullins, 1992; Torut, 1994; White, 1995; Phillips, 1990; Hauck and Hurd, 2005; White, 1997). In a study of LLSs by Malaysian students, Razak (2000) found that metacognitive strategies were the most

frequently used, and attributed this to students' interaction with the computers as a medium for learning. On the other hand, the result of the present study seems to contradict previous studies where learners' metacognitive strategies were found to be used at a low level (O'Malley et al, 1985, Vanijdee, 2001; Hu, 2003).

The two most frequently used strategies were thinking about progress in learning English, and having a clear goal for improving English skills. These two strategies have been found to play an important role in the development of students' autonomous learning as they may help in promoting greater learning efficiency in the classroom and enhance learning experience by focusing on the process rather than the product (Jiménez Raya et al., 2007). In line with this, the results from student diary data identified the use of several metacognitive strategies during the progress of the course. This included planning, exploiting learning resources, and seeking more practice opportunities (see section 5.3.1, Metacognitive Strategies). Diary data revealed students' use of the iPad, which may help them in allocating time for regular daily practice. Their planning strategy may have started to develop when becoming familiar with the new technology. Other students claimed that the applications provided via the iPad had improved their self-discipline and developed their self-management skills (see section 5.3.1 Findings Relating to the First Research Question: The Development of Language Learning Strategies, Metacognitive Strategies). The present study confirms Chapelle and Mizuno's (1989) findings in terms of the use of the five sub-categories within the metacognitive strategy type. However, these findings do not match those of Almutairi (2008) who reported Saudi female students' limited use of strategies for planning and setting goals. She suggested that students' dependence and their inability to develop strategies are both inter-linked and both the result of the educational system, traditional teaching methods and the Saudi culture.

In terms of seeking more practice strategy, findings from the log file data indicated that students seemed to be involved in activities to practise English when using tablet devices. For instance, reading English books, watching programmes in English, and downloading language-learning apps for grammar and vocabulary learning, and visiting websites for educational purposes were some of the strategies students seemed to employ to improve their language learning skills (see Figure 7 and Figure 8). All these activities involved the use of tablet devices, i.e. the iPad, which appeared to facilitate the application of metacognitive strategies to complete the language tasks. The findings are in accordance with another study showing the opportunities provided by mobile devices as a research tool for 'locating information', 'answering questions', and 'searching for pictures' (Muller et al, 2011).

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In terms of self-monitoring, the use of the tablets as mediating learning tools may have encouraged students to develop the sense of awareness needed to examine their own contribution to the learning process. For example, the TAPs data showed a tendency for the students to check their spoken outcome by recording it via the recording app, available on the iPad, and then trying to edit it. The use of this strategy was likely to have involved students' reflection on both their negative and positive performance. They also monitored their learning by assessing their answers to the language task in terms of vocabulary, pronunciation, and grammar (see section 5.2.2, Metacognitive Strategies). According to a study by Muller et al. (2011), the use of technologies helped students in monitoring and organising their learning, and enhanced their self-regulated learning, hence, helped them to achieve certain learning tasks

The increased frequently use of metacognitive strategies can be attributed to a number of reasons. Firstly, the age of the participants. Results from the BQ questionnaire showed that students' age ranged from 19-25 years, indicating that students are adults who may have the ability to plan, managed and organise their learning in order to become academically successful learners. This supported my initial assumptions before carrying out this study that students in the Saudi context may have the ability to take control and be responsible for their learning but that they need to be provided with opportunities to exercise this ability and help to develop that ability through formal instruction. Once the direction was initiated by the teacher and students were equipped with the external aid of the tablet devices, they seemed to start organising their learning resources autonomously and taking on a more active role, than was the case in the traditional classroom.

Secondly, the nature of the language course at FBAR University, which required a high performance from students in order to reach the high level of proficiency they were expected to achieve by the end of the course. Based on the quantitative data results, students reported three strategies as the most frequently used: thinking about their progress in learning English language, having a clear goal for improving English skills, and trying to find ways to use the iPad to practice English. This indicated that students in the current study tended to use such strategies in order to regulate their learning.

The second most frequently used strategy type was that of cognitive strategies. Results from both quantitative and qualitative data provided evidence that students also made frequent use of cognitive strategies. Using an online dictionary, searching, translating, and practicing English sounds were among the most frequently reported used strategies by the students. According to the evidence from TAPs data, many students appeared to have a problem with English pronunciation. A practical

solution that many students seemed to apply was using their device to access different applications in order to practise the sounds of English. For example, some students tended to compare their pronunciation to models available in different applications on the iPad such as online speaking dictionaries and translation apps. Evidence of this is apparent from the following excerpts:

> *A3: / I heard this word before.. extinction../*
>
> **the student listened to google translate word modelling**
>
> *Researcher: why did you enter the word in google?*
>
> *Student: / to listen to the sound of the word.. to make sure that I'm pronouncing it correctly/*

> *A5: / I will practise to say them… some words are new to me mmm .. I will either repeat it to myself or I will enter them in google translate app …and it will read them for me/*

This finding lends some support to the results of Alzahrani's (2015) study of Saudi students' EFL learning via mobile devices in which students used their mobile devices to practise pronouncing vocabulary they had learned during the course by listening to the word in mobile apps, such as Google Translate.

In addition, translation was one of the most frequently used strategies among students to complete their language tasks. TAP data suggested that many students relied on the translation apps on the iPad device to translate vocabulary and phrases they did not understand (see cognitive strategies). Such a strategy seemed to be very popular among the students due to their level of proficiency in English, and therefore, it appeared important for them to understand the requirements of the task and be able to respond correctly. The following excerpts from student diary data exemplify this:

> *'At the start, I found the homework difficult and did not understand the question; but I used Google translate to translate some words which appeared mysterious and I could not understand'*
>
> *'To complete the homework I answered it in Arabic and then in English and translated any words which I did not know. I found it easy to use my iPad to translate my answer.'*

The findings are in line with the results of several studies (Alharthi, 2012; El-Aswad, 2002; Alhaysony, 2008), who reported students translating form Arabic to English to produce a correct form of English for their written tasks. According to Alharthi (ibid, p. 9), students used a translation strategy to achieve different learning goals such as '*checking accuracy of written expressions, generating ideas, or in their attempt to recall suitable words and phrases'*. Likewise, in his study of Saudi students' EFL

learning via mobile devices, Alzahrani (2015) reported students' use of their mobile devices to translate words, idioms, phrases and expressions from English to Arabic and vice versa.

However, one of the potential issues in using the different functions such as translation, and auto spelling check available on the tablet device is the possibility that these functions may be detrimental to the learner's ability to, for example, translate, or spell correctly, for themselves. The use of these functions may therefore not be effective tools for learning tools, as they require less mental effort than when learning without them. These functions may have helped students in completing a particular language task, but this is not necessarily an indication of a development in the thinking that is required to complete a similar task when the mobile device or the app is not available. For example, the students may spell correctly when they use the auto-check app on the iPad but this does not mean that they have acquired the ability to spell correctly when not using the app. Despite these suggestions, no evidence was found in this study to suggest that students' mental processing was negatively impacted by the use of the different functions of the iPad device for language learning. In fact, findings of the present study indicated that while students may have indeed depended on the tablet device to complete their language tasks, this did not prevent them from enhancing their language skills. There is data which suggests that students may have improved their language skills in some areas (see section 5.3.4. Findings Relating to the Fourth Research Question: Motivation towards Tablet Devices, and section 5.4.3 Findings Relating to the Fourth Research Question: Motivation towards Tablet Devices). However, it is worth mentioning that the language acquisition, in this study, was not measured statistically, rather it was investigated through students' reported data. The positive findings, therefore, are based on students' perceived language improvement rather than experimental pre-post-test measurement. This is an area that needs further investigation and further evidence to confirm whether the use of mobile device functions may or may not have replaced learners' mental processing. A longitudinal study would provide insights into learners' language learning development over time and whether this was affected positively or negatively by the use of iPad functions

The third frequently used strategy type was that of social strategies. According to the questionnaire results, students' overall use of social strategies in SILLG before the study was medium with a mean score of 3.3, and this increased to a high use in the post and delayed questionnaires with a mean score of 3.5 and 3.7. Similar results were found in SILLIP with a mean score of 3.5 post study and 3.8 in the delayed questionnaire. An examination of the social strategies used by students, as revealed by the diary data, supported quantitative results in which students reported using the iPad device as a

mediating tool to interact and communicate with their teacher and peers outside classroom (see Social Strategies).

Concerning the high use of social strategies twelve weeks after the start of the study, and the continued increase twenty four weeks after the end of the study in SILLG and SILLIP, data from the students' diaries and interviews can shed light on such results. Students in the present study may have used the iPad device with all its affordances and features as a social mediation tool by which they seemed to be able to increase their interaction and communication with other. The social barriers present in Saudi Arabian society may consider one of the main obstacles students encounter in seeking ways to expand their social use of the language. However, after introducing a range of applications on the iPad to encourage students' collaborative learning, students are appeared to be more engaged in course-related group discussions outside the classroom. Many students reported that using the iPad enabled them to perform activities they did not previously have the chance to do, such as cooperating with others, asking their classmates for help, giving and receiving feedback, and socialising and strengthening their relationships with other students. Examples of students' responses are as follows:

> *'I worked within a group and understood more clearly because we could discuss with one another and exchange ideas'*
>
> *'I like the collaborative task of working in a group because it has helped build my communication with my classmates; some of whom I had limited communication with in class only. But now I can communicate with them.'*
>
> *'Ask3 App has helped me to communicate with the teacher and my classmates via discussion and commenting on one another'*

Another reason for the high frequency of use of reported social strategies use in the post and delayed SILLG and SILLIP may relate to the nature of the educational systems in the Saudi context. Results from diaries and the interviews revealed students' need for more communicative and collaborative opportunities rather than relying solely on the traditional teaching of the target language to pass exams as can be seen below:

> *'All they care for is making us study grammar and recall vocabulary yet no one cares to teach us how to speak and use the language outside the classroom'*
>
> *'No, the teacher did not try to make us speak, as most of her concentration was on the language rules, we did not want to concentrate on that, we wanted to speak using the new language, because we were there to learn'*
>
> *Dana: Before, speaking skills were removed from us and no one cared about it though we need it a lot here in Saudi Arabia because outside you rarely find someone to speak English with.*

> *Roze: Originally they were not interested in it in schools… they only care that we learn grammar and recall vocabulary but no one cares about teaching us how to speak or use the language outside the class.*

The same view was expressed by Saudi female students, in Almutairi's (2008) study, who realised the importance of using the target language for communication and interaction. However, the results of high frequency social strategy use seem to contradict previous studies which found that learners used social strategies at a very low level (Almutairi, ibid, Vanijdee, 2001). While Vanijdee attributed such findings to the lack of interaction in the distance learning environment, Almutairi argued that students' low use of social strategies was due to their insecure feeling about their language competence, and their educational experience in the Saudi context. In such an educational system, the priority is given to the reproduction of information rather than the use of language in real contexts, which contributes to students' passive involvement in the learning process. However, despite learning in the same context where vocabulary learning and memorising different grammar formulas were important requirements for good performance in the final exam, students in the present study claimed a frequent use of social strategies, which may have helped them not only in improving their English level but also in using the language in real life. Their explanation for this is as follows:

> *'I have become used to the course and the language and have started to speak in English for the majority of the time.'*

> *'From all aspects... for example, traditional teaching was boring and like they said it was really repetitive, meaning it was the same throughout the years, the same method…everything… but to hold an iPad and other apps... you have to love it... you love to use it and love to learn. I mean it is not like just sitting for 12 years on a chair like that [laugh] and you only receive and receive, no one tells you stand up and do this or that… or come on and speak with us… or or or…you just sit and receive... a receptive all the time... but with the iPad it helped us collaborate and speak even at home, and it helps us use our English in real situations'*

To conclude, the capabilities of tablet devices and the availability of a wide range of applications along with the convenience and ease of use may have contributed in helping students to be more aware of their language learning strategies. It appeared that students sought out applications and numerous functions of the device to complete a language task that may have otherwise been difficult to manage. As the data indicated, students seemed to use their device as a translator, a dictionary, a notebook, a recorder, and a search engine as well as using it to access course materials and information all at the same time. In addition, the multi-touch feature of the device and the available affordances seemed to enable 'just-in-time learning', i.e. when knowledge was needed it was available at that time.

Research question 2

Do students work collaboratively and how does this change as the course progresses?

6.3 Collaboration and Interdependence

As discussed earlier in this thesis (see section 2.2.3 Collaboration and Interdependence), a major component in promoting autonomous learning is students' interdependence and collaborative learning, in which learners engage with 'more capable others', either a teacher or other more advanced learners who can provide assistance and guidance (Oxford, 1997). This version of autonomy is what Benson (1996) referred to as social autonomy, which relates to learners' interaction, working together and helping each other.

Three themes emerged from the results of the qualitative data (student diaries and focus group interview), which indicated that students in the current study experienced collaborative learning in three different forms: working together, learning from peers, and feedback.

The first form of collaborative learning was working together. It seemed that many students were keen to form groups and networks inside and outside the classroom to benefit from peer support. Prior to the course, students were not exposed to group activities, as the lectures were the primary form of teaching at the college. Hence, teachers played a lead role in classroom interaction for knowledge transmission. Such a teacher-learner relationship has resulted in students' preference for individual learning (see section 5.4.1 Findings Relating to the Third Research Question: Motivation towards Language Learning As Greenback (2008, p. 253) states '*decision to work alone does not appear to arise out of an inherent preference for more individualistic forms of learning but out of negative experiences of group working'*. Alsaeid (2011) in her study found that Saudi students preferred to work alone more than working with others. She associated such a preference with students' passive role in the classroom along with the limited exposure to group work that discouraged them from participating (ibid).

As reported by students, working with others outside the classroom was restricted to their private zone, i.e. their family members. The limited amount of time during class and school breaks probably did not afford students the opportunity to work together and exchange knowledge. After introducing the tablet-assisted activities into students' working space, it seemed likely that they started to exercise their cooperation skills and rely more on each other. Results suggest that students may have become not only receptive but active and started to look for alternatives, provided via the tablet device, to perform group work activities and be involved in group related discussions to complete a given language task (see section 5.3.2 Findings Relating to the Second Research

Question: Collaborative Learning, and section 5.4.2 Findings Relating to the Second Research Question: Collaborative Learning). In an action research study, Chen (2013) investigated students' use of tablet devices to learn English in informal contexts. He argued that tablet devices facilitated learner collaboration and encouraged its use.

Another point worth mentioning is the impact of group pressure on students' performance. The findings suggested that at first, some students were reluctant to give comments, share their thoughts, or participate in any group related activities even outside the classroom environment. For Nunan (2009), students' reluctance to participate in group work is related to linguistic factors and psychological factors such as anxiety and shyness. Evidence to support this argument is apparent in the present study. Some students may not benefit from the group work experience either because they were embarrassed about making mistakes or because they were accustomed to being passive learners. However, as the course progressed, those students gradually appear to adapt to the new environment. As indicated by some students in the interviews, the power of the group would seem to have the potential to bring about changes in students' practice. Working in groups placed some pressure on those who were not contributing as intended. Over time, as suggested in the qualitative results chapter, students who failed to conform to what was considered acceptable before started to work harder, and interact more frequently in order to create a better impression among their classmates. Evidence of this is apparent from the following excerpt:

> *Ghadeer: To be honest…at the beginning… it was not suitable for me…I used to prefer being alone, and even after creating groups I still did not understand anything... but my group taught me and made me love it.*
>
> *Interviewer: You came to love working in groups?*
>
> *Ghadeer: Yes, they gained experience from me and I from them…this means it helps you and makes you love to work in groups. If I did not know something…I used to ask my group members whether Huda or Nema, and they used to answer me directly…and the same happened with them. If they did not know anything they would ask me, so there was a real teamwork…I used to receive from them and at the same time they used to receive from me and help me... it was a teamwork where everyone assisted each other, and this would really help you learn.*
>
>
> *Interviewer: Ok and did you like the idea that people might hear you speaking?*
>
> *Dana: Not the first time [laugh].*
>
> *Interviewer: Ok and afterwards what changed your mind?*

> *Dana: Afterwards I got used to seeing girls sending more than once…so I started to say why don't I give it a try…why not me…I came to see you commenting on the girls' work… and when one made a mistake and you commented… she would correct it and send it again... so I told myself …there is no difference between us so I started to try… this encouraged me and gave me like a push...why not…why don't I do it like the other girls.*

> *I went home and realised that my other classmates were able to complete the task, therefore I would be able to do the same.'*

These findings are in accordance with other research studies that emphasized the influence of the group on the quantity and quality of communication (Chang, 2007; Dixon, 2011). According to Arthur (2001), working with others can have a positive learning outcome. It is through group work that students develop their confidence, are positive about making mistakes in front of others, and are willing to take the initiative and take risks in order to explore the structure of the target language (ibid). Findings of this study supported the current literature that emphasizes the significance of group processes in the classroom (Dörnyei and Murphy, 2003, Schmuck and Schmuck, 2001). According to Fleming and Hiple (2004), such a social learning environment encouraged learners to contribute to group discussions, and engage in group related activities.

In addition, another affordance provided by the tablet device is the ability for students to participate at distance, which seemed to give the students some feeling of security. For example, many students reported that they did not have the courage to participate in any course-related discussions because they did not want to be embarrassed or lose face in front of their peers as can be seen in the following extract:

> *'I told the group that I didn't want to speak because I was not fluent, and I had a difficulty in pronouncing words and asked one of the other group members to speak.'*

According to Alsaeid (2011), Arab students tend to be reluctant to express themselves in public including online class communication tasks due to cultural issues and social barriers. One difference in the present study, however, is that students seemed to be courageous enough to take part in online discussions. Probably, being able to participate in a discussion without having to face their peers and the teacher was an achievement that pushed them beyond their safe zone. They explained that being in a different location gave them the courage to exchange their thoughts despite deficiencies in their language.

> *'We were able to ask questions on the 'Ask3' as well as interact with other classmates and use social networking meaning that any questions we had could be answered by others using the voice facility; working as group strengthens bonding and excitement amongst the students'.*

The second form of collaborative learning, as was evident in the results chapter, is learning from peers. Findings of the study indicated that many students used their peers' assignments, available online, as a model on which they based their own work. In fact, as many students reported in their diaries, reading, and listening to other's contributions could be seen as a source of guidance, and support, especially for weak students that may have enabled them to build up their linguistic and content knowledge, revise and correct their work (see section 5.3.2, Learning from Peers).Swain and Miccolli (1994) claimed that low proficient students, when working with more proficient peer, would feel intimidated, and as a result, became passive in the learning task. However, this was not the case in the present study where working with more able peers, in the online community, enabled less able students to socially construct their knowledge. In other words, more capable learners played the role of the expert in the learning process, providing linguistic support to their less capable peers until they internalized such information and performed the task independently. As a result, the students' role seemed to transform from observer to active participant as evident in the data obtained from students. Several studies in the literature established that peers' work, in online learning setting, can work as a main source of guidance, support, and information whenever a knowledge gap is encountered (Hwang et al, 2016; Morita, 2004; Pollara, 2011; Hmelo-Sliver et al, 2008; Chang, 2007).

These findings confirm the sociocultural theory (SCT) perspective on scaffolded assistance. In the ZPD model, for learners to expand their mental development, they have to be provided with appropriate assistance (scaffolding). Such scaffolding allows learners to perform tasks independently, that they would previously have performed with the assistance of experts. Having reached a stage beyond their actual level of functioning and having become capable of independent performance, the assistance can be withdrawn (Vygotsky, 1978). This study therefore provides evidence in support of SCT on the role of experts (MKO) in the pedagogic process. It was confirmed that in the context of the current study, mechanisms such as feedback was identified as assisting performance strategies, which high proficiency students used to bridge low proficiency students' performance in the ZPD (see section 5.3.2, and section 5.4.2).

The third form of collaborative learning is feedback, which refers to student-student and teacher-student exchanges. In the first few weeks of the course, feedback was exclusively between students

and the teacher. As the course progressed, some students might have been encouraged to give comments on their peer's contribution particularly on the Ask3 app discussion board. Feedback mainly took the form of social commentary such as positive remarks, encouraging comments, and compliments. On the other hand, the nature of feedback between students and the teacher took another form. The teacher used feedback as a means of assisting students' performance. The exchanges included comments on the content of the participation; the forms of the language, and knowledge evaluation besides encouragement and positive reinforcement of assignments and course related activities (see Figure 11). Evidence of this is exemplified in the following extract:

> *'It was a good experience to interact with the teacher and receive encouragement and positive reinforcement and pointing out our mistakes and how to correct them through interaction.'*

> *'I waited for feedback from the teacher and when I received this I was very happy and relieved.'*

> *'Afterwards I got used to seeing girls sending more than once…so I started to say why don't I give it a try…why not me…I came to see you commenting on the girls' work… and when one made a mistake and you commented… she would correct it and send it again… so I told myself …there is no difference between us so I started to try… this encouraged me and gave me like a push…why not…why don't I do it like the other girls.'*

> *'they always comment on what I say so I've become more encouraged to learn from my mistakes, and the teacher used to comment on me and correct me directly, not like the test where I had to wait for a month to know whether I was correct or not'*

It seemed likely that the feedback received from the teacher resulted in improving the quality of student to student feedback. As suggested in the study, students began to elaborate on their comments to each other by emphasizing aspects of their peers' contributions that related to the content, and the form, pointing out language mistakes or improvements to their performance. The findings are in line with other research showing that expressing and exchanging views with more capable peers or the teacher can enhance students' awareness of areas that need more work (Xiaoli, 2008; Burkšaitienė, 2013; Murray, 2014). However, various studies have concluded that teacher feedback is more valued by students than peer feedback (Hyland and Hyland, 2006; Lugendo, 2014; Kessler et al, 2012). Lugendo (ibid) attributed this to the quality of teacher feedback which can help students in evaluating their learning, identifying the strengths and weaknesses in their performance, and focusing on areas that need to be improved.

6.3.1 Factors Influencing the Change in Students' Collaborative Learning Practices

As the course progressed, gradual development of collaborative practices was evidenced by the results of the study. Such a change can be attributed to three main factors relating to the affordances provided by the tablet device for collaborative learning: the quantity of communication, the quality of communication, and the control of communication.

Firstly, the quantity of communication. As was evident from students' responses in the qualitative data results, the combination of iPad features and the unique design of the device; in particular, the lightweight, compact size, and ease of use, probably made it an ideal social mediating tool through which students were able to maximize their interaction with other students and the teacher as well. These technical features of the device were found to be essential if learners wanted to learn on the move (Henderson and Yeow, 2012; Bush and Cameron, 2011). It was suggested that students' collaborative learning became situated in everyday settings and continued despite the constraint of time and space. To illustrate, using the tablet device and the different collaborative applications may have changed students' perspective on classroom communication. Interaction with the teacher or their peers was no more related to physical space, which was well suited to the Saudi context due to the many social barriers Saudi culture holds. For example, some students reported using the device to access collaborative networks while at home or on the beach, which suggested that students were able to increase their communication opportunities even in their private zone. The student's explanation for this is as follows:

> *'The advantage I found when comparing it to the laptop is that I could use it anywhere without a limit on place or time. I was at the beach so I used my iPad to access emails and communicate with my classmates'*

> *Roze: I liked that we are able to use the device even when we're not in the class, when at home, when we are in different places we can still gather and connect, this is better than being face to face. I like the idea that we can do the same task that is possible inside the university, yet being outside at anytime.*

> *Nada: Even if it is during the night.*

It was thus argued that the networks provided by mobile devices would seem to enhance learning as students can keep communicating even when moving from one physical location to another (Klopfer et al., 2002; Becta, 2004; Ryu and Parsons, 2009).

In addition, the sense of freedom the students started to experience in terms of when they were able to work, was different from that of the traditional classroom in which collaboration was restricted only to school time in the classroom and controlled by the teacher. For example, even when students were absent from school or out of the city, they seemed to be able to access their group discussion via the saved feature on the apps used as can be seen in the following:

> *Lama: I love it because sometimes when I was absent I logged in late and could get any information I wanted. Even if some of the girls sent a message through WhatsApp, we would be asleep.*

Thus, this would suggest that the tablet device changed the nature of communication by means of continuity in online face-to-face meetings by providing an archive for absent students. The findings are congruent with results reported by other studies (Henderson and Yeow, 2012; Denk et al., 2007) that mobile devices facilitated students' communication with other group members even at home by allowing them to access the different virtual space discussion. The findings agree with the argument that mobile devices changed the way the students viewed time; learning is not restricted to a fixed time of the day but can extend throughout the day in a continuous learning experience in which learners can access different resources, content, and communication at their own pace (Ryu and Parsons, 2009; Wong and Looi, 2010).

Moreover, the different communication channels, such as e-mails, messages, meeting platforms, and forums offered by tablet devices seemed to increase communication between learners and teachers as well as among learners themselves (Denk et al, 2007). This seemed to create an increased sense of closeness to other members of the group. Many reported their feeling of belonging, which may result in them being more willing to work with people they would not usually collaborate with, i.e. when face-to-face collaboration was the only possible option. Besides, such a social network between students may have facilitated the appropriate psychological conditions for students to be more courageous and willing to hear feedback from their peers, provide informal evaluation, and share responsibilities. When students develop a rapport with other learners, this would result in promoting their involvement and reducing their anxiety (Clément et al 1994). In addition, the new learning environment, provided via the iPad device, may have blurred the boundaries between students. As a result, students seemed to feel more comfortable about communicating with other students that they would otherwise not speak to in a face-to-face setting. The following excerpts from student diary data exemplify this:

> *'We were able to ask questions on the 'Ask3' as well as interact with other classmates and use social networking meaning that any questions we had could be answered by others using the voice facility; working as group strengthens bonding and excitement amongst the students'.*

> *'There are some Apps on the iPad which have made it possible to connect with my classmates outside of class; especially 'Fuze' programme which I began using'*

> *'Being able to contact you at any time is useful to us if we have any questions or wish to discuss anything with our classmates.'*

The increasing feeling of connectedness with other students and the establishment of social networks promoted by the use of tablet devices for learning are in accordance with the findings of other studies which report that positive interpersonal relationships are enhanced in online learning settings (Ilic, 2013; Schwarz et al., 2000; Cochrane and Bateman, 2010; Ling and Helmersen, 2000). According to Ilic (ibid), mobile devices can strengthen social relationships among individual students by adding other methods of communication through which students can interact with people they dislike or are not familiar with. However, these finding do not match those of Chen's (2013) in which students, in his study, did not benefit from the affordances provided by the tablet device for interactive and collaborative learning and carried out most of the activities individually. Chen's research (ibid) suggested that the differences in students' communication and use of the device might stem from students' lack of knowledge and support in regard to the tablet use, which prevent them from using the device effectively.

Another point worth mentioning is the use of the device in public spaces. Some students suggested that using the iPad device in public areas is more appropriate than using laptops due to its common use among people and particularly the younger generation. According to this view, the iPad is different from other devices, such as laptops, as it is more personal. Unlike the laptop, which is more conspicuous and can draw attention, it seemed that the iPad provided students with some privacy as it resembled their other personal devices such as a smart phone. Evidence of this is apparent from the following excerpt:

> *Dana: if I use the iPad in front of people it's normal, yet if I use a laptop everyone would keep staring at me.*

> *Interviewer: Interesting, so you feel embarrassed if you bring out your laptop to learn English while if you used your iPad or mobile no one would notice.*

> *Dana: Yes, it's normal especially because everyone has them, not like the laptop. For example, you feel that if you bring out your laptop, as if there is something wrong, like they would say: what's made her bring out a laptop, is she coming for business?*

Thus, even in a situation where students were out of their private zone, they would use the device for communication with ease and without being embarrassed or self-consciousness. This advantage provided students with a seamless learning experience and maximised their collaborative opportunities within their learning community. The majority of studies in the literature suggested that the personal nature of mobile devices is the main feature that distinguishes them from other types of technology such as laptops (Henderson and Yeow, 2012; Demski, 2011; Manuguerra and Petocz, 2011; Kakihara and Sorensen, 2002) and allows learners to adapt their learning according to their needs and preferences (Murphy, 2011; Morrone et al., 2012). Mueller and her colleagues (2011), however, found that students were less enthusiastic about using the iPod outside the classroom, and they preferred the laptop over the iPod due to the technical limitations they experienced when using the device such as the small screen size which posed some problems in viewing and typing. However, they found it to be useful in places where computers were not available.

Secondly, the quality of communication. Results suggested that the availability of peers' assignments anytime and anywhere provided students with continuous access to support. To illustrate, the multiple short visits by less capable students to the different communication channels, such as Ask 3, Voicethread, Nearpod, and Dropbox file applications, may allow them more time to think, reflect upon, better understand, and form answers to the different language tasks. In addition, the different range of answers to the same task would give students the opportunity to compare their answers to others, expose themselves to more ideas and hence, develop better understanding. Examples of this can be seen below:

> *Sana: When we spoke there at Fuze or Ask3 we did practice, and we now listen to the opinions of others, or at least the comments of others, this helped us a lot.*

> *Sana: It also helped us to compare the pronunciation or the sentence with our classmates, or with someone who is better than us, or not exactly better but someone who knows the word better than us.*

> *Mona: Yes, at first when it came to English I used to only listen and that was it… I did not use to like speaking.. but not anymore, it's different now.*

> *'I thought about the comment from the teacher to my other classmates that the recording should be clear, pronunciation correct and sentences understandable.'*

> *'I liked the simplicity of both Apps that I used and that I could hear the other group members before recording; and when I record, the teacher would comment on my mistakes so that I could learn from them and not become embarrassed during speaking in class.'*

The students' performance when working on their listening and speaking tasks was similar to that of the learners in Hwang et al.'s (2016) study who tackled their speaking tasks by listening to each other's audios, comparing their contributions, identifying mistakes, and then revising and modifying their own product. Such a process may help learners to practise and reflect on their speaking skills, and improve their performance. The finding also aligns with the assertion made by Wong and Looi (2010) that in a MALL setting, the acquisition of the language was enhanced through students' ongoing discussion and comparison of their learning product with other learners, and through seeking their peers' assistance.

Thirdly, the control of communication. As discussed in the literature review in this thesis, control is considered beneficial to individual learners as it is thought to have an impact on their language learning outcome (Glass and Carver, 1980). Based on this idea, learners who have control over their learning are more likely to get a positive outcome as their tendency to make more effort to learn the language develops. Taking charge of one's own learning is another point related to the concept of learning autonomy, which involves learners' ability to determine objectives, select their learning methods, and self-evaluate their learning. In the present study, using tablet devices to collaborate seemed to increase students' control over location, time, mode of learning, and information exchange. The characteristics of the iPad device may have provided students with instant access to different communication tools, thereby, they were able to choose when and where to communicate. Examples of students' responses are as follows:

> *'the good thing about this device was being able to add a picture and that I could record more than one video and delete them; I could also watch other people's videos and hear their comments at anytime of the day and at any place'.*

> *'Using the iPad has given me many opportunities which I didn't have before and it has saved time, as well as being easy to use and travel with, and use it to communicate with others anytime.'*

> *'Being able to contact you at any time is useful to us if we have any questions or wish to discuss anything with our classmates. In relation to the course, it is a great idea to use technology for a useful purpose that will help in our daily lives as much as we use it for entertainment. It is a good idea to break the routine and use new tools for learning and communicating with others; not forgetting that we can connect at any time and any location.'*

In addition, students were able to select the mode of communication that suited their situation and convenience. Whether using synchronous, such as e-mail, discussion forums, document exchange (e.g. drop box app), or asynchronous communication tools, such as online conference meeting apps, each student would have the freedom to select the method of communication based on the level of closeness to her peers or the teacher. For example, it was found that most students tended to rely on asynchronous communication tools such as email to communicate with the teacher and their peers. As the course progressed, gradually students got to know each other more and adapted themselves to the course. Consequently, they seemed to contribute more in a synchronous communication mode, such as Fuze meeting app (see Figure 10, Figure 12, and Figure 13). Such an increase in control over the mode of communication has been found to be beneficial for learner satisfaction (Liaw et al, 2010; Ilic, 2013).

Students also had control over the exchange of information, meaning that they were able to comment, give feedback, or respond to others' questions when they had enough information to exchange or were satisfied with their contribution. Unlike face-to-face communication where students are forced to respond immediately, students were able to view different answers, learn from others, reflect and then modify their contribution. Demouy and Kukulska-Hulme (2010) described oral communication in EFL learning activities as being a 'daunting' and 'stressful' experience especially for learners at beginner and intermediate level due to the nature of such activities in which students felt uncomfortable at being placed on the spot. The finding here, however, suggested that the use of asynchronous communication applications may have allowed more time to relax, think, and reflect before contributing. This finding contributes to that body of research by confirming the claim that asynchronous tools enable both interactivity and reflection that is not possible in traditional face to face communication (Ducate and Lomicka, 2008; Hobrom, 2004; Williams and Jacobs, 2004; Oravec, 2003).

It can be concluded that using the iPad to communicate with other students via different interactive apps was straightforward and interesting for many students. However, some found it to be inconvenient and difficult due to a number of reasons: 1) working together was less beneficial due to the inactivity of some students in doing the language task. For some students, group work became difficult when one member of the group took the leadership role, hence becoming responsible for the completion of the task and the contribution of other members. The students' explanation for this is as follows:

> *'To be honest, I didn't like the idea of being the leader of the group though one of the members helped me with the presentation. I felt the others didn't contribute at all. Nadia was late sending her section of work which meant the whole task was submitted late; this is frustrating because I had to bear the consequences of that.'*

2) The breakdown of communication during online meetings due to slow internet connections, which deprived some students of sufficient opportunity to speak English during the online group discussions. Evidence of this is apparent from the following excerpts:

> *'I faced some problems. For example, where I live we suffer from slow internet speed and sometimes a lack of connection'*

> *'Unfortunately, due to the poor internet connection we were not able to use the voice call facility, so we continued with the text chat only'.*

> *'At the end, I lost internet connection and couldn't re-join the group. I found some difficulty in dealing with the app'*

> *'Some of the girls continued to try and join the conversation but they couldn't, some of them lost interest and left.'*

As found in Demouy and Kukulska-Hulme's (2010) study, the quality of the internet connection was one of the challenges encountered by her students, and lack of a good connection resulted in unwillingness to use mobile devices for academic learning. (3) Some students had limited tablet experience and found it difficult to keep up with their peers, which resulted in failure of some students to contribute to the language task. Participants explained this issue as follows:

> *My experience with electronics is very limited and I used to wish I could improve my use of it. When we received the iPad I didn't know how to use it, I am not yet good with it but while my development is limited, I am still trying. '*

> *'At the start, using the iPad was difficult for me because it was the first time I had ever used it; and I had difficulty using many Apps including email which I knew how to use on other computers but not on the iPad. I felt that everything was difficult and felt that I could never learn to use it.'*

The same result was reported in another research studies suggesting that unfamiliarity with mobile devices and lack of knowledge about how to use the different applications can restrict students' use of the device, which may have a negative impact on students' involvement and participation (Demouy and Kukulska-Hulme, 2010; Chen, 2013). 4) Other students exhibited various degrees of concern about the time management issues associated with online discussion tasks on the iPad. Some students reported having difficulties either managing to work all at the same time or finding a

quiet location to enable them to converse with the others with clarity. Examples of this is in the following:

> *'The problem of group work is that it can be difficult to complete a group task if the whole group is not available at the same time or if we experience problems with the App. This has happened with 'Fuze' App when I could not access it at the same time as the rest of the group.'*

> *'I began to record but my husband was making noise watching football and he wouldn't turn the volume down. I went into a different room and recorded my first attempt but the volume was too low, on the second recording noises could be heard from my WhatsApp'*

> *'I joined Nadia and Ilham at the end; the noise level was very high because I had my nieces and nephews staying with me in the flat and I was disappointed because the voice was not at all clear at my end. If both of them were speaking, I would only be able to hear one. Huda would speak to me every few moments and ask if it was fixed and when I checked, I'd answer that I felt a little like I was not with them'*

Demouy and Kukulska-Hulme (2010), similarly, suggested that difficulty in finding a quiet spot to practise speaking was perceived by students as a constraint that made such an activity more challenging.

Research question 3

What motivation do students have towards learning English and how does this change as the course progresses?

6.4 Students' Motivation towards Learning English

This study aimed at investigating students' motivation when learning English in a MALL environment in comparison to their prior experience in a conventional language learning classroom. Taking this further, the study sought to identify the different factors contributing to this change. This section is divided into three parts: the first part discusses students' motivation towards English learning before the course, the second part discusses students' motivation towards learning English after the course, and the third discusses the factors linked to such a change. In order to answer the second research question, which concerns about students' motivation towards language learning, I shall refer to the results of the questionnaires as well as the themes that emerged from the qualitative data.

6.4.1 Students' Motivation towards Learning English before the Course

Results of the BG questionnaire showed that students' main reasons for learning English before the course were to improve their job prospects and/or because they had been required to take a language course. Such results were confirmed in the focus group interview in which many students indicated that their interest in learning English was fostered in part by their sense of academic achievement as well as the fact that it was a requirement if they wanted to register for the major courses that were taught in English (see section 5.3.4. Findings Relating to the Fourth Research Question: Motivation towards Tablet Devices). Such a form of extrinsic regulation is what Ryan and Deci (2000b) referred to as external regulation. Externally motivated behaviours are performed as a reaction to externally imposed rewards or praises or to avoid threats of punishments. Externally regulated learners are characterised as being less autonomous and perceived their behaviour to be controlled (ibid). For others, English was the instrument through which they could travel abroad, and improve their personal image among other more advanced learners of English. Such a less controlled type of extrinsic motivation is introjected regulation, which refers to a behaviour driven by an internal feeling of pressure to avoid guilt, anxiety, embarrassment or to obtain self-enhancements, appraisal and pride (Ryan and Deci, 2000b). This indicated that students had a range of motivations and motivational orientations acting upon them, many of which were extrinsic (Deci and Ryan, 2000).

Moreover, results from focus group interview suggested that most students had previously had a negative experience in learning English, which weakened their desire to learn the language. Conventional teaching approaches were cited as a key contributing factor to students' disappointment and frustration. For example, one student reported her experience in learning English in a classroom where translation and grammar were the core of the learning process, reporting that it had a negative impact on her desire to learn to the extent that she left school for four years. In addition, the tedious repetition and high demands on memorisation may have led many students to disappointment and failure. Many students expressed their view that language learning before the course had been a waste of time. Words such as 'boring' and 'not important' were used by many students to describe their experience in learning the language before the course. For some of them, English was not one of their priorities, thus, they did not have the intention of developing their language skills further (see section 5.4.1).

In addition, the interview data indicated that some students tried new learning activities to make up for the deficiencies of the conventional classroom. For example, watching English movies,

communicating with native speakers of English, searching the Internet, and seeking family help were some of the strategies students applied to improve their English skills. However, not all students were able to enhance their language skills. The majority confessed to a lack of effort in learning English due to their feeling that the English classroom was boring and uninteresting. To illustrate, many students did not expect to improve their language skills, as they believed that the conventional teaching method would not help them achieve such a goal (See Early English Language Learning). Almutairi (2008) attributed the need of Saudi students for more flexible interactive and communicative mode of learning to their boredom in the traditional classroom, where the focus is on the reproduction of information, on teaching grammar, reading, writing, and vocabulary that corresponded to their passive engagement in learning. Alongside low expectations of achievement, fear of making mistakes and embarrassment due to weaknesses in the students' language were the main reasons for unwillingness to put any effort into learning the language. Many students perceived themselves as weak in speaking skills due to their past language learning experience, which had not enabled them to participate in any communicative activity. The finding supports Masgoret and Gardner's (2003) claim that learners' perception of their academic achievement can influence their motivation in the classroom. For Houde (2006), these feelings or opinions become the emotional barriers that are closely linked to students' low expectation of themselves. As a result, students start to believe that they are not able to learn the target language due to its difficulty or because they are not good at it (ibid).

Another indication of students' motivation is their attitude towards language learning. Responses from students' diaries and interviews revealed that most students had a negative attitude. For example, some students perceived their previous experience of communicating in English as difficult and/or inadequate. They attributed this to the teaching method, where the main concern was finishing the textbook and passing exams without any opportunities to communicate and express themselves. One of the students described her experience as being dull and boring to the extent that she fell asleep in some of her classes. The findings favour Hamad's (2013) and Alsaedi's (2012) claim that students in EFL classrooms in Saudi Arabia have limited opportunities to practise English due to the nature of classroom interaction which is dominated by teacher-talk in which teachers lead classroom discussion and disregard students' initiation of any unplanned topics and limit their participation to one word answer. According to Al-Ahaydib (1986), one of the reasons for students' lack of classroom participation is the dominant role of the teacher in Saudi classrooms.

Such a lack of motivation towards English is what Ryan (1995) refers to as amotivation in which learners are characterised as being completely passive and having no intention to work. Such a behaviour is attributed to three different reasons: a lack of competence, inability to achieve the desired outcome of a task, and not valuing an activity (ibid).

6.4.2 Students' Motivation towards Learning English after the Course

The SILLG questionnaire investigation before the start of the course, in which learners were asked how using their mobile devices could impact their motivation towards English language learning inside and outside the classroom, showed that there were no significant differences between students' responses prior to the study and twelve weeks after the start of the study (p=.02). However, significant differences were found in students' responses prior to the study and twenty four weeks after the end of the study with a p value of .014. There was a statistically significant difference in the overall mean rank between students' responses twelve weeks after the start of the study and twenty four weeks after the end of the study. The reason for such results could be attributed to the nature of motivation. Being conceptually complex and unique, motivational changes may occur only in the long-term. This could explain the reason for the significant difference in students' responses twenty four weeks after the end of the study but not twelve weeks after the start of the study. To better understand the findings from the quantitative data, I shall look more closely at data from diary entries, focus group interview, and log file.

Students' experience of using the iPad as a mediating tool for learning English revealed a noticeable change in their motivation towards learning the language over time. Students' motivation to learn the language increased when using the iPad. In their diaries, many students expressed a strong desire to learn English and attributed this to the new teaching and learning approach, which they found to be fun, novel, and challenging. Their growing desire was evidenced in their eagerness to learn English rather than other subjects. Most students expressed their preference for the course over the conventional teaching method they had previously experienced, and their desire to extend the course for a longer period. The joy and novelty of working with the tablet devices may have been the reason for students wishing for the course not to end. Owing to the learning opportunities provided in MALL, many students believed that the course had a positive impact on their language gains.

> *'I felt that we have covered the book quickly, and time has passed unexpectedly and we wish we had been studying like this since the start of the year as we would have developed our language and gained much more benefit. I have improved in many tasks and hope to continue to improve'.*

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This is supported by Mohamad's (2012) view that mobile devices are an engaging and motivational tool that can support teaching and learning. In line with this, data from interviews indicated that students had become more interested in the language and this in turn had increased their desire to make more effort. For example, one student described her experience in learning English in the first semester of the academic year as not being rewarding, which affected her desire to attend the English class, as she believed that attending or missing traditional classes made no difference to her language improvement. After the course, however, she expressed her enthusiasm for attending the English class, which reflected the change in her motivation.

In addition, improving language skills and being able to use such skills in real life resulted in changes to students' views about the need to learn English and led to a new level of positive feeling towards the language.

> *'I came to want to learn a language, grasp a language: I mean the English became a very important thing to me, something that feels fun to learn.'*

Deci and Ryan (1985) referred to the learning process that is associated with satisfaction, pleasure, and enjoyment as intrinsic motivation, which is believed to be more powerful than extrinsic motivation and leads to more effective learning. According to Ushioda (1996), intrinsic motivation is closely associated with the concept of learner autonomy as the former can be increased when students are involved in active independent learning, which in turn leads to more effective learning.

In addition, entries from students' diaries indicated that many students were keen to put more effort into English learning when they were engaged in the iPad based learning activities. Several students reported their attempts to improve their English skills by doing extra work on their own, either by seeking opportunities to practise English language, or by interacting with other language users. For example, some students started to develop a regular learning habit in order to develop their listening and speaking skills. Examples of this are below.

> *'I have become used to listening to videos on the iPad and it has become a routine for me'*
>
> *'Listening to videos has become a daily habit for me'*

> *Shahad: I came to want to learn a language, grasp a language: I mean the English became very important thing to me, something that feels fun to learn.*

Interviewer: Ok did you extend your use of the iPad by adding or removing installed apps?

Dana: Yes I did install some apps that teach the English language and grammar... and also the quiz apps and such…

Interviewer: Ok why do you practise? What is the reason? What is it that you aim to enhance exactly and wish to improve?

Dana: Nothing in particular… I only wish to enhance my confidence in everything by speaking a little bit! I mean... if I repeat the word being said I feel that my pronunciation gets better?

Sana: I've become addicted to TED app... to try and learn the English language correctly…and speak like natives do... I watch it everyday.. everyday I'd listen to them.

It is possible that the increase in students' self-confidence contributed to the development of a sense of responsibility, thereby, students started to rely more on themselves to find new ways to practise the language rather than depending solely on their teacher. This was evidenced in the log file data, which suggested that students used their devices at different times of the day to accomplish different language tasks, such as working on their homework, writing diaries, watching App tutorials, revising their answers, reading English books, and searching for information related to the course (see Figure 7, Figure 8, Figure 9 and Appendix 19). According to Crick and Wilson (2005), confidence is one of the factors that contributes to learners taking responsibility for their learning. Similarly, Burt (2004), associated self-confidence with ability to exercise control, which are considered as requirement for fostering learner's motivation. The findings of the present study are in line with findings by the Alkhatnai (2011) who claimed that learners' increased achievement led to increase in their self-confidence, which consequently affected their learning. Self-confidence was associated with Saudi EFL students' degree of involvement in an online course (ibid).

Furthermore, for many students, learning English using the iPad device was an encouraging and useful experience. In fact, many students admired the flexibility and opportunities provided via the iPad device, which provoked active learning in the class. Another reason reported by students was the asynchronous environments provided via the iPad device that encouraged them to use language, particularly speaking skills, freely, and increased their involvement in class discussion. The finding agrees with Kamhi-Stein's (2000) argument that the asynchronous learning environment, in online learning, enables students to participate at their convenience, which is found to have a positive impact on students' desire to work with other learners.

Concerning the students' attitude towards learning the target language after the course, the interpretation of the data from students' diaries and interviews in addition to the data from questionnaires revealed a remarkable shift in students' attitude. Most students seemed to have a positive attitude towards learning English after the integration of the iPad device into the language course. Student attitudes towards the innovative nature of the course played a role in changing their view towards of English. For example, students expressed their interest in learning English in the new learning environment because of the effect it had in promoting a sense of independence and allowing them to take control over many aspects of their learning. In addition, students claimed that their interest in learning the language increased when they used the iPad device as a mediating learning tool as it added a new dimension to the learning process, making it more fun, effective, convenient, and consistent (see section 5.3.3).

Moreover, the opportunities provided via the iPad device and the interactive nature of the course, may have changed student attitudes towards such activities from being seen as difficult, a source of embarrassment, and burdensome to being appealing activates which could be used to maximise students' opportunities to use the language in real life.

6.4.3 Factors Influencing the Change

Results indicated two factors that led to students' motivational changes, namely a change in power relationships, and the integration of tablet devices into the course.

A Change in Power Relationships

Findings from qualitative data indicate students' appraisal of the shift they had experienced in the power relationship. Moving from teacher-centeredness in the conventional classroom, to learner-centeredness in the MALL classroom was appreciated. Students reported that the new teaching method brought in a more balanced power relationship in which they were given more opportunities for decision making, managing their learning, and relying on themselves. Their perception of the teacher changed from being the source of imparting knowledge, to offering guidance through a process of exploring and mastering different skills. It appeared that the teacher-guided approach aided the gradual transfer of control; students slowly began to take on more responsibility for their learning. Consequently, students started to develop a sense of independence and self-confidence, which resulted in changes in their attitude to language learning and an increase in their motivational level. The results are similar to those discussed in Xiaoli's (2008) study in terms of teachers' role in guiding students and setting up learning direction throughout the learning process. One difference, however, is that in Xiaoli's study the teacher's guidance was maintained all the time during the

students' learning process, whereas in the present study, such a role was perceived to be essential only in the first stage of the course. Littlewood's (1999) concept of reactive autonomy suggesting that the teacher's guidance in the early stages are essential for helping students to regulate their learning and achieve their goal.

In addition, results from questionnaires and reported data indicated that the integration of iPad-based learning into the course contributed to the concept of control. When students had the ability to control the pace, location, and time of their learning; and the control was placed in their hands in terms of choosing with whom they communicated, it seemed likely that they grew more confident and became more motivated to engage in learning English. Results from SILLIP questionnaires, at three points in time, showed that most students agreed with the statements relevant to the increase in their level of motivation when they had greater control of their learning. The focus group interview confirmed these findings. For example, students valued the off-line use of the device, which was used with certain applications such as the iTune U course and the iBook. This appeared to enable them to find information relevant to their course without having to depend solely on their teacher and classmates. Such a result suggested that tablet devices seemed to offer learners more control over their learning and enable them to access, create, and share information across different contexts. In turn, students reported that their ability to take responsibility and exercise control over their learning enhanced their motivation and increased their involvement in the course. This can be linked to Hobrom (2004) where participants in his study reported feeling empowered when learning in online environment than when learning in traditional classroom due to the control they experienced in accessing learning resources at their pace.

Integration of the iPad Device into the Course

A positive factor that students cited as a reason for their increased motivation was the level of comfort they experienced in the new teaching and learning method. The iPad-assisted learning environment may have an effect on students' level of anxiety. As they reported in their diaries, they enjoyed learning in an environment where they were able to relax and stretch their abilities without the pressure of being face to face with their teacher and peers. Students who were shy or not comfortable about speaking in public seemed to build up more confidence and were willing to take up the challenge and try. Data from the interviews reinforced this claim as many students described the shift they experienced in regard to the practice of their spoken English. Before the course, they were unwilling to speak in class or participate in any communicative activity. Gradually they started to become less self-conscious and more adventurous in presenting themselves to others. The use of

the different communicative applications on the iPad device, and being away from the teacher and other learners may have resulted in students becoming more willing to step up and share their thoughts. This finding supports Butler-Pascoe and Wiburg's (2003) claim that technology-enhanced language learning can have a positive impact on learners' anxiety level due to the relaxed learning environment it provides. Pressure and anxiety usually associated with language learning are reduced in such an atmosphere in which students have the option to work at distance from their teacher and peers (ibid).

Furthermore, students claimed that using the iPad device added a new dimension to the learning process, making it more fun, and effective. Convenience, flexibility, portability, and the affordances provided via the iPad device were reported by students to be the factors that helped to stimulate their interest in learning English compared to their previous experience of learning the language. Students reported how they enjoyed the wealth of information and the different learning choices available at their fingertips via the different applications on the iPad. When compared with other available technologies, such as smart phones and laptops, students expressed their preference for the iPad due to the highly personalised nature of the device, which provided them with a platform to develop their learner-centric educational experience (see section Experience with MALL, and section 5.4.3). This in turn enhanced their motivation.

Overall, the majority of students valued the new intervention course and expressed their preference for this kind of learning over the conventional teaching method. Consequently, they started to appreciate the language class and planned to continue English learning with the tablet device to improve their proficiency.

Research question 4

What motivation do students have towards using tablet devices for learning, and how does this change as the course progresses?

The fourth research question was aimed at investigating any change in students' motivation towards the tablet device that might influence a change in a positive direction towards English learning.

6.5 Students' Motivation towards Using Tablet Devices
Sub-question A

To what extent do students think this approach supports or limits language learning?

6.5.1 Students' Motivation towards Using Tablet Devices for Learning before the Course

The BQ questionnaire results indicated that all students owned a different type of a mobile device before the course in which 95% of them reported owning a mobile phone, 85% owned a laptop, 38% owned an iPad, and 23% owned other type of mobile devices. The feeling was very different when using the device for entertainment compared with using it for language learning. Results from students' dairies and interviews indicated that the affordances provided by the device and its use as a mediating tool for collaboration and language learning changed their perceived value of the device over time. Before the course, many students reported in their BQ questionnaire that they used their mobile device as an organizer, notebook, online dictionary, e-book, calendar and camera. They also reported using the devices to access information, and communicate with others.

However, it was clear during the course that not all mobile applications and functions were used by students. In fact, during the first mobile learning workshop, it was found that some students did not know how to set up an email account. Others indicated that they did not know that they could access free e-books on their device. This suggested that the ownership of a tablet device and the availability of different applications is not an indication that those students know about the device or know how to use it for learning. For example, despite the high rate response to the statement *'I know how to use the calendar'*, most students did not know how to use it on their tablets during the course which suggests that student claims of this type may be unreliable, meaning they may have reported skills or knowledge that they did not possess. This finding supports Wong and Looi (2010) and Chen's (2013) argument that student access to technology does not mean that they can use it effectively to expand their learning.

6.5.2 Students' Motivation towards Using Tablet Devices for Learning after the Course

Students' Perceptions of Whether This Approach Supports or Limits Language Learning

Data from students' diaries and questionnaires show a remarkable shift in students' motivation towards the use of the iPad in learning English. Most students reported that before the course, they feared it would be burdensome and a great challenge since some could be said to be technologically illiterate. However, this changed gradually.

> *'Although at first I questioned how we could learn using the iPad, I had thought that this method of learning would be difficult but I found the opposite and I feel happy as it has helped us connect with one another.'*

The students started to look at the iPad as a complementary support to traditional learning. Many changed their perceived value of the iPad in learning English; they highlighted how their use of the

iPad had transformed from being solely an entertainment device to being a mediated language learning tool. When asked in the interview about the importance of the device to them, most students acknowledged its value in facilitating their language learning. This result is in accordance with other research studies showing a positive view of learning with technology (Demski, 2011; Henderson and Yeow; 2012, Chen, 2013; Al Fahad, 2009).

The use of the iPad in the delivery of the language course was perceived by students as a positive learning experience, especially the opportunity to continue learning outside the formal context of the classroom. Unsurprisingly, portability was a key benefit of using the iPad for accomplishing a wider variety of activities anytime and anywhere. Results of the study showed that the portability of the device may have aided students' learning and provided them with a number of opportunities to access learning resources and engage in learning activities across context. Examples of the students' responses are below.

> *'I really like the idea of the iPad, and it has reduced the time and effort of carrying paper notes and books'.*
>
> *'Using the iPad has added some fun to homework, it was also easy to use, light weight, useful, effective, and it takes less time and effort'.*
>
> *'Using the iPad has helped me understand about the lesson. In my opinion, using the iPad is a good experiment because the way in which education is delivered should be developed and made more interesting.'*

Overall, the appropriate use of the iPad device to support language learning would seem to improve students' perception of language learning and increase their learning efficiency.

In terms of language learning skills, results from both students' diaries and interviews indicated that students perceived the impact of the iPad based learning approach on their language skills positively though many admitted the slow and gradual progress they experienced as they believed that speaking and listening competence takes a long time to develop. For example, many believed that their listening skills had improved due to several factors. Firstly, they attributed their progress to the different resources that were available to them during the course. Many students appreciated the opportunities offered by the different applications on the iPad, and highlighted the importance of having a variety of resources and learning materials to be used at their convenience. Such a feature may have given them the sense of independence and control, enabled them to expand their practice beyond the scope of the classroom, and made their listening practice more effective and useful (see section 5.3.4, and section 5.4.3). Similarly, the undergraduate students who used mobile devices to practise speaking and listening skills in Demouy and Kukulska-Hulme's (2010) study were able to

maximise their exposure to the target language beyond the classroom setting, which had a positive effect on their language skills. The findings are also consistent with Lys's (2013) study in which students' oral and listening abilities were enhanced through learning and practicing the target language by using the iPad device.

Secondly, another factor identified by students was the flexibility they had in accessing the learning materials anywhere and anytime. For example, accessing authentic material on the TED TALK app and being able to listen to different English accents and different topics of interest that were not associated with their English course had a positive impact on their practice. It seemed like they became more interested in learning the language and participated actively in speaking. The findings of this study thus agree with the view that mobile assisted learning can increase students' access to a variety of learning materials and applications, which was believed to have a positive impact on students' engagement, and frequency of learning (Alfahad, 2009; Bush and Cameron, 2011).

Thirdly, as discussed earlier in this chapter, the process of having access to others' contributions to the learning task and being able to compare their own answers to others, being able to give and receive feedback, and being able to archive and retrieve this information may have affected students' language learning experience positively. For example, students explained how they were able to compare their own content with their peers' pronunciation, vocabulary, and sentence form. This strategy would help them to notice their own mistakes and make appropriate changes. Moreover, in the iPad-assisted activities, students may become more willing to step up and share their thoughts, seek help from others, seek advice and exchange views, which could have an impact on their communicative skills. For example, one student described how she was able to communicate with native speakers and make herself understood without the need to use hand gestures and facial expressions, which according to her was an indication that she had reached a higher level of spoken language. Huang and Van Naerssen (1987) argued that one of the main indicators of successful oral communication is students' ability to speak with their teachers and peers or with native speakers of the target language.

Fourthly, in terms of confidence, students believed that their increased confidence in learning English resulted in an increase in the quantity of speaking. Once students' self-confidence began to build, they seemed to be more interested in learning the language and participated actively in speaking. They reported how they were able to perform better in their speaking and listening tasks and attributed this improvement to the new medium of instruction they experienced during the course. They explained quite explicitly how they became more enthusiastic about language learning

and how this consequently affected their language achievement (see section 5.3.3 Findings Relating to the Third Research Question: Motivation towards Language Learning).

In general, based on the findings, students believed that they made good progress in their English skills, especially in speaking and listening. However, not all students were able to make use of the new learning approach appropriately to support their language learning. Some other learners, or those who were not accustomed to technology, reported the whole process to be frustrating. They expressed a negative attitude towards the use of the iPad for language learning using terms like 'frustrating', 'difficult', and 'a waste of time', to justify their preference for traditional language teaching and learning. Such students exhibited various degrees of concern about the issues associated with incorporating the iPad device in their learning (see section Negative Aspects, and section Experience with MALL).

Cost was the first obstacle perceived by some students as a limitation that hindered the optimum use of the device. Some of the free versions of the different preloaded applications, used during the course, offered limited use of the app. Thus, students tried to purchase the full versions of these applications which some could not afford. The second obstacle was the speed of the internet. Not all students had access to a high speed internet connection outside of the classroom which accordingly may have created hurdles for these students, especially in online group discussions that required immediate responses. For example, one student explained how her low speed internet connection caused a breakdown of communication during online meetings, which prevented her from participating in the discussion, hence; limiting her language learning practice. Technical issues were reported in Chen's (2013) study including limited internet access and cost, which negatively affected students' learning outcome.

In regard to the third obstacle, some students exhibited various degrees of concern regarding familiarity issues associated with incorporating the iPad device into their learning. It seemed likely that not all students were able to use the device in the same way for language learning, as some of them had limited tablet experience. Some students reported difficulties either working with the different apps or trying to solve technical problems. For instance, one student found it difficult to operate the device, download applications, and set up different accounts. As a result, she could not see the potential in using the iPad or any similar device for language learning due to her feelings of frustration and confusion throughout the course. Furthermore, some students, who were unable to accustom themselves to the new learning approach due to their unfamiliarity with the new technology, complained about time wasted in their attempts to solve technical problems or figure out

how to use new applications, which they believed had led to lower marks in their assignments and final exam. The vast majority of studies in the literature established that introducing mobile learning into education cannot be successful and will not result in promoting effective learning without a significant training for students (Song and Fox, 2008; Levy and Kennedy, 2005; Wong and Looi, 2010; Chen, 2013). As Chen, (2013) states,

simply providing students with the mobile device did not result in its effective usage in language learning. Learners need to be properly guided not only technologically, but also methodologically. [...], creating an easily accessible supportive environment in which expert and peer advice can be consulted is vital for MALL. Instructor guidance on how the mobile technology can be better utilized for language learning in terms of activity design and collaboration is also essential, since students may not be aware of the technological affordances of the new technology (p. 29).

This brings the discussion back to Dickinson's (1992) view of learner training in which he argued that autonomy cannot be achieved simply by providing learners with conditions to work independently of their teacher. Learners need pre-defined skills and preparation to guide them through the learning process in order to achieve the goal of being autonomous learners. This study, thus, indicated that some students' language learning performance when learning in the MALL setting was negatively impacted by their lack of knowledge about how to use the tablet device.

In this study, the teacher-researcher provided students with a guidance on how to use the new technology throughout the course. However, there might be some students who were shy about asking for extra help or there may be other reasons that made learning with the tablet devices a frustrating experience. This was indicated in conversations with students with limited experience of technology. It seemed that the course did not match some students' desired learning style, did not suit their time schedule, or did not match their personal interests. A further investigation into the relationship between students' learning style and the delivery mode is needed though it was beyond the scope of the current study.

Sub-question B

Do students continue to use the tablets to learn after they complete the course?

6.5.3 Students' Use of the Tablets to Learn After They Completed the Course

One of the main concerns in the current study was to investigate the long term impact of using the tablet device for language learning on students' motivation. In other words, the study aimed to show

whether students' motivation towards using the iPad device for language learning was sustained over time. Therefore, twenty four weeks after the end of the study, interviews were carried out with a number of students to explore any change in their motivation towards the use of the iPad as a mediating learning tool.

The follow up interview findings gave an indication that students' learning habits were maintained. Many students reported plans on how to improve their basic English skills, in particular listening and speaking by the merging iPad technology into their daily learning routines, which contributed their progress in English and increased their motivation. Even though they had completed the English course, they all claimed that they continued to learn English autonomously using the iPad device. Some students reported setting up a group discussion using the Fuzebox App to discuss topics related to other projects. In addition, students reported their determination to learn and achieve their goal even without their teacher's presence and guidance. For instance, one student described her journey in learning English after she left the college for personal reasons. She reported her adoption of iPad-assisted learning activities, such as self-quizzing grammar games, as well as speaking and listening activities. The conversation that took place is presented below:

> *Interviewer: Ok did you extend your use of the iPad after I left?*
>
> *Dana: Yes I did install some apps that teach the English language and grammar... and also the quiz apps and such…*
>
> *Interviewer:: Ok do you have any example of any apps that you installed and used?*
>
> *Dana: Yes... like 'Learn English' and 'Speak English'.*
>
> *Interviewer: Ok why do you practise? What is the reason? What is it that you aim to enhance exactly and wish to improve?*
>
> *Dana: Nothing in particular… I only wish to enhance my confidence in everything by speaking a little bit! I mean... if I repeat the word being said I feel that my pronunciation gets better?*

Such an example indicated that even when students had no pressure in terms of their marks and exams, their sustained motivation towards learning English and the tablet device as a learning tool may have encouraged them to make positive efforts to improve their English skills.

Respondents believed that their learning in general and language learning in particular would be enhanced if it were integrated with the tablet devices. Students firmly supported the use of the iPad to substitute textbooks and other devices, as they believed that the iPad surpasses the use of any

other means of learning. The findings indicated that technological advances were welcomed by students and their willingness paves the way for technology use. This might be due to the affordances provided by the iPad device and the number of benefits students experienced in using such a technology to assist their learning. In other words, even traditional learners who might be assumed to resist changes, had positive attitudes and would prefer to keep learning in the new teaching and learning method.

Students' familiarity with the advantages of iPad device integration, their training in using the iPad, and changes in the way they learn the language would seem to have been the most important factors that contributed to students' sustained motivation towards the use of the iPad to support their learning. This finding is in accordance with Song's (2000) claim that technology based learning can contribute to learners' persistence.

Chapter 7: Conclusion

7.1 Introduction

This chapter presents a summary of the key findings to the research questions of this study. Knowledge gained from the current study provides implications for teachers, learners, and institutions. The chapter then reflects upon the limitations of the study and concludes with suggestions for further research.

7.2 Summary of the Key Findings

In this study, I carried out a teacher guided EFL course for the English department in IABF University. This study engaged with the learning process experienced by Saudi language learners who used the iPad device to develop their autonomous language learning. The study, therefore, explore whether the multi-modal functionality and affordances of the iPad device, when utilised in a Mobile Learning environment and introduced in a teacher-guided EFL course, can promote students' language learning autonomy.

To answer the research questions, a mixed methods case study research design was adopted, in which a combination of various data collection instruments was used, covering questionnaires, students' diaries, think aloud protocol, focus group interview, and online tracker log file.

The findings of the study provide useful information for understanding the development of students' autonomous language learning in a mobile assisted language learning (MALL) environment. The study found that implementing tablet devices, in particular the iPad device, into a language course appropriately and carefully enhanced a number of behaviours and practices which were related to students' language autonomy: language learning strategies, collaboration and interdependence, motivational changes, and control.

Research question 1

What language learning strategies do students appear to use during the course and how do these change as the course progresses?

Results of the first research question indicate that students used a wide range of cognitive, metacognitive, and social strategies when working with the iPad, and there was a statistically significant increase in students' reported use of language learning strategies by the end of the project. It was found that the use of the iPad as a mediating learning tool enhanced students' awareness of

LLSs, which they need in order to develop their language skills. Findings from both qualitative and quantitative data suggested that the iPad, as a mediating tool, facilitated the application of LLSs to complete the language tasks. Findings also showed that the students used the device to actively seek out information either online or via the different available applications when they encountered a knowledge gap.

In addition, the findings of this study confirmed the benefits of implementing the use of tablet devices for language learning in terms of developing social strategies, indicating that it can compensate for the lack of English exposure outside the classroom by facilitating interaction and communication among students. As the course progressed, quantitative data from questionnaires indicated a significant increase in students' use of LLSs after the implementation of the iPad based activities. It was suggested that the integration of the iPad based approach to learning had a positive impact on developing students' LLSs

Research question 2

Do students work collaboratively and how does this change as the course progresses?

The second component of learners' autonomy in language learning, as identified in this study, was collaboration and interdependence. The study concludes that collaborative learning occurred in the current study in three different ways: working together, learning from peers, and feedback. It was found that working in a MALL environment promoted students' cooperation skills and encouraged them to rely more on each other. Results of the second research question revealed a change in students' learning behavior as they became active learners and started to look for alternatives, provided via the tablet device, to perform group work activities and get involved in group related discussions to complete a given language task. In addition, such an environment suggested an enhanced social network between students and the facilitation of the appropriate psychological conditions for students to be more courageous and willing to give and receive feedback. The increased contact among students created a less threatening atmosphere in which students were encouraged to access the different communication channels available via the tablet devices to either post their answers to a given task or reflect on what others had posted. In addition, feedback became a part of the interactive process of learning, which fostered conversation among students and enabled them to share their knowledge and involve in a discussion around the learning task.

As the course progressed, gradual development of collaborative practices was evidenced by the results of the study. This change was attributed to three main factors relating to the affordances

provided by the tablet device for collaborative learning, namely the quantity of communication, the quality of communication, and the control of communication.

Research question 3

What motivation do students have towards learning English and how does this change as the course progresses?

Results concerning the third research question confirmed the influential role of tablet device-based activities in motivating students to learn English. After the introduction of the course, students demonstrated a strong desire to learn the target language. They reported that their motivation was enhanced by their experience of using the iPad as a mediating tool to learn English, which they found to be fun, novel, and challenging. It has been confirmed in this study that students felt motivated when they were given more responsibility and control over their learning. Their ability to control the pace, location, and time of their learning had contributed to stimulated interest in language learning. Another factor that related to students' increased level of motivation was the teacher's role. This study emphasises the role of the teacher as an important contributor to student success in learning. Moving from teacher-centeredness in the conventional classroom, to learner-centeredness in the MALL classroom resulted in changing students' perception of the teacher from being a source of imparting knowledge to offering guidance through a process of exploring and mastering different skills. It appears that the teacher-guided approach aided the gradual transfer of control; students slowly began to take on more responsibility for their learning. Consequently, students started to develop a sense of independence and self-confidence which resulted in changes in their attitude to language learning and an increase in their motivational level.

Research question 4

What motivation do students have towards using tablet devices for learning, and how does this change as the course progresses?

The final conclusion in this study related to the fourth research question which was concerned with students' motivation toward using tablet devices for learning. The use of the iPad in the delivery of the language course was perceived by students as a positive learning experience, especially the opportunity to continue learning outside the formal context of the classroom. Students' responses in their interviews and diaries exhibit a positive attitude towards the use of tablets in language learning.

Furthermore, the iPad based approach to learning helped students sustain their motivation to learn the target language, communicate with their peers, and look alternative ways of developing their language skills. It was evident from the data that students continued to use the device for language learning and that it provided them with a platform to transfer their developed skills to other subject areas and other contexts. In addition, the findings of the qualitative data indicated that student involvement in the iPad based approach to learning provided them with a direction for their learning in general. Thus, it can be said that the intervention course helped them develop a more autonomous approach to learning and introduced them to good learning habits.

7.3 Implications

The study demonstrated that tablet based activities can be designed and integrated into an existing English language course, despite the social, cultural, and practical constraints which were found in the Saudi context. This integration enabled the development of the students' autonomous approach to language learning, increased their motivational level, stimulated an interest in learning, encouraged practice to improve their listening and speaking skills, helped to raise their self-confidence, enabling non-threatening, personalised learning experiences and peer-to-peer learning. To elaborate, the following implications are identified for the learners, the teachers, and institutions.

7.3.1 Learners

Any attempt to integrate technology even with a popular device such as the iPad, should pay close attention to students' differences in terms of their learning styles, their beliefs, and their abilities. Students' individuality has to be taken into account when designing any activity as every student will use and perceive such an activity in a different way. Thus, the tablet-enhanced course should fit students' daily life and be designed to work with students' learning realities. In addition, the course should be established with a focus on the number of constraints students suffer in their context such as: social life, workload, and limitations of time and space in their educational settings. For example, activities that are designed to be delivered during out-of-class hours and during holidays have to be a rewarding experience. Otherwise, students are more likely to refuse to make extra efforts in the learning process.

Besides, it is essential for learners to be informed clearly about the objectives of the course; and to be convinced about the gains and practical opportunities offered to them from the very beginning. What is expected of them must be clarified, including the role they will need to play in this new learning environment. In return, students need to understand the requirements needed to take

advantage of the affordances of such an approach to learning like the extra effort they might need to devote to their learning.

Besides being aware of their abilities and learning style, learners have to take further steps to commit fully to the course. Despite being committed to other responsibilities while studying, students have to make constructive use of their time by organizing their time around their goals and priorities.

Furthermore, the integration of any sort of technology to assist learning depends on students' computer literacy in the first place. Students need to know how to use the tablet devices in order to engage fully in the learning process. Thus, this study has highlighted the importance of training sessions for learners to ensure that they understand the different uses of the device for language learning. As was shown in this study, students' reaction to the course was very much affected by their ability to use the iPad efficiently. Some students reported limited enthusiasm for the course due to their limited technological knowledge. In addition, a fast response to learners' problems is crucial to avoid discouragement and confusion for those just starting to use mobile devices for learning.

7.3.2 Teachers

This research indicates that developing students' autonomous learning in a mobile assisted learning environment does not mean abdication of the teacher's responsibility. Rather, changing the teaching approach and the learning environment entails a change in the traditional power dynamic in the classroom. Such a change involves giving students' more responsibilities and choices in their learning. Thus, teachers need to consciously alter their role to become a moderator, advisor, facilitator and to be less controlling. In addition, they need to change their practice to include activates that provide students with opportunities to be more independent, free, autonomous, and self-directed.

Furthermore, findings of the study underline the role the teacher has to play in maintaining student motivation. As was shown, teacher guidance throughout the course provided students with the assistance they needed to continue learning. Thus, teachers must do their best to develop a rapport with their learners. Building a positive relationship with students must be considered an integral part of the learning process, in particular in contexts where the teacher is viewed as the only authoritative body in the classroom. Teachers need to make a special effort to develop a connection with students through sharing personal stories with them, humour, and fun. At the same time, teachers should set their rules and give clear guidelines to students in order to maintain the right balance between formal

and informal learning. Teachers should consider the best ways to create a warM-learning environment without learners crossing the lines and interfering in a teacher's personal life.

Moreover, the teacher might consider including other methods of assessment to account for students' informal learning outside the classroom. For example, the teachers could ask students to write a learning diary in which they can report the sort of issues, challenges, and benefits they experience when using mobile devices for learning. The teachers, in addition, could give students credit for completing their learning journals based on the grading system applied in their educational institution. Besides, the students can be encouraged to expand their learning outside the classroom and perform activities relating to their course by offering marks for their extra work and showing a value for their attempts. These kinds of actions can help to maintain their motivation and enhance their engagement in the learning environment. Another point that has to be clarified to learners from the very beginning of the course is the time when they can contact their teacher. Agreement between the teacher and students on a certain time of the day after which students are not allowed to attempt to contact their teacher, especially in using synchronous communication Apps.

Additionally, the delivery of a language learning experience via the iPad device or any similar technology was found to be a complex, and challenging experience on the part of the teacher. Planning, designing, and developing new activities related to an existing course along with the possibilities of the tablet devices to enrich students' language experience was found to be a daunting task. Teachers who would consider integrating tablet based activities into their practice are expected to work extra hours preparing their activities, reviewing new applications, and familiarising themselves with the technology. Besides this, teachers will add to their workload inside the classroom as well as extra work outside the classroom such as: forming discussion groups and managing discussion boards, responding to students' enquiries online, and giving feedback among other activities that the new teaching approach might require. The extra work teachers are expected to do will likely not be acknowledged nor paid for by the university. Thus, teachers' enthusiasm, motivation and involvement are important factors for successful mobile assisted language learning.

7.3.3 Institutions

At institutional level, educators and policy makers, especially those in higher education, should take into account what technology, in particular tablet devices, can offer to the learners and the learning process. As was shown in this study, one of the benefits of implementing the iPad based activities course was supporting learners' autonomy. The course helped students to be self- directed and sustained their motivation in learning the target language. Thus, this study provides a portrait of the

viability of tablet devices as a mediating tool appropriate for learners to achieve their learning goals. The adoption of such an approach by the university will not compete with conventional teaching activities; rather, it is aimed at complementing it by addressing some of the pedagogical challenges encountered in this context. In fact, integrating mobile devices into the course is intended to enhance curricular goals and support students in a transformative way.

However, before implementing such a project, several issues have to be taken into account. Firstly, teachers need professional development in order to understand the potential of tablet devices in enhancing their instruction. Teachers should be encouraged not to rely solely on the course textbook; rather, they should be given more control in using the variety of applications available via the tablet devices, and take advantage of the authentic English materials available online. They can also make use of the asynchronous and synchronous communication tools to promote collaboration with learners and make the learning experience more diverse and interesting. In doing so, teachers should be given more flexibility in fulfilling the prescribed syllabus of the language course. In other words, teachers have to be given the opportunity to be more creative in complementing the course syllabus with the different learning materials and identify for their learners the best activities to fulfill their learning expectations.

Secondly, the extra time and effort teachers spend preparing their learning activities and managing online activities outside the classroom should be counted as part of their workload or at least considered as overtime work and be paid for. The university should ensure that it can afford these extra expenses and consider it as a part of the learner development plan in higher education institutions.

Thirdly, before implementing a similar project, the university should ensure a good standard of infrastructure. Technical issues, poor internet connection, lack of supplementary tools such as smart boards and HD televisions can hinder the whole learning process. Therefore, having a help desk for technical issues available for students on campus is recommended. In addition, there should be good investment in purchasing learning applications, electronic textbooks, and a careful selection of technological tools for the course. Thus, instead of carrying both versions, i.e. electronic and hard, students can pay a technology fee per course.

One of the main reasons for successful technology enhanced learning is appropriate configuration. It is important to bear in mind that technology has the potential to great benefits to language learners, but it is not an end in itself. Technology can help students to learn only with the

collaborative work of different individuals, including instructional designers, language teachers, courseware designers, and effective pedagogical strategies. Therefore, university and educational institutions should allow considerable amount of time to implement a sound pedagogical project and determine the best way to use tablet devices to assist learning in general and language learning in particular.

7.4. Limitations

Despite my attempt to deliver the best possible study, like any piece of research, there were a number of limitations that could not be avoided due to various factors related to the nature of the research, the context of the study, and the constraints of PhD research study.

One limitation of this study related to the small-scale case study design which was carried out in a public university in Dammam, Saudi Arabia, which makes it difficult to generalize the findings to a wider context of EFL classrooms whether within Saudi Arabia or to a global context. The inclusion of other participants from other institutions across the country was not possible in this study, which would have allowed the scope of the results to be widened and a stronger conclusion drawn. However, the educational system in Saudi Arabia features a great interrelatedness among higher educational institutions in terms of the teaching approach, the applied syllabus, and the social background. These common features could make it possible for the results to be generalized to include students in their first undergraduate year course in Saudi universities.

Another limitation was the small sample size which was 21 students. The standard class size in Saudi universities varies from 25-50. However, as the research was self-funded, including a larger class size was very expensive and time consuming. Thus, the small class size was provided at the researcher's request. Implementing the same project in a larger class size would have resulted in a greater range of responses. I would argue, however, that using a small sample size made it more possible for the researcher to gain an in-depth understanding of the process of implementing the iPad based activity course.

Furthermore, no male students were involved in the study because data collection procedure in Saudi Arabia are permitted for researchers of the same gender. Thus, it is not clear if the results might have changed or if additional insights might have been obtained if the sample had included both male and female classes. Due to cultural and social barriers imposed on Saudi woman's movement, education, and work, the experience of Saudi male students would differ markedly from those of the Saudi women. For example, a Saudi woman needs her guardian's permission to study, work, and

travel. There are also other restrictions imposed on women to ensure their security and Muslim identity, which impede them from being fully independent in the society. Such regulations are not imposed on Saudi male which raises the question of whether the current study would obtain different results due to gender differences.

However, insights from the present mobile-mediated project and the rich data obtained could be of great use to teachers in other contexts regionally and globally. As was shown in the introduction chapter, the higher education system in Saudi Arabia is governed by one main body, which is the Ministry of Higher Education. This means that there is great interrelatedness among educational institutions in terms of the curricula and teaching both male and female students receive. To illustrate, despite the inclusion of a single gender sample, the results would be of use to teachers and educational institutions that have common features they share within their settings. In addition, it could be possible for the results of the current study to be relevant to some extent to other mobile learning and teaching projects carried out in other language related settings.

In addition, there was no control group to allow comparison between intervention and non-intervention groups. Although the SILLG questionnaire was also administered to a control group who weren't using iPads, the researcher was not able to collect other data collection such as interviews, and students' diaries with the non-intervention group. This limitation was due to practical difficulties in implementing such methods in a busy teaching environment where permission to carry out the study with more than one classroom could not be granted. Therefore, it was decided to eliminate the non-intervention's SILLG results from the study.

A further limitation is related to the duration of the study, which was 12 weeks (10 weeks of teaching and 2 weeks for the exams) in total. Although follow-up interviews were conducted 24 weeks after the end of the course. Teaching students for a longer time was not possible due to access and time constraints. It would be valuable to assess students' practice in using tablet devices for language learning for a complete academic year, or longer, to see whether students would continue to improve their language learning performance, sustain their motivation, and to investigate any other issues that might arise.

Finally, despite the rich data obtained from the online log file data, it was not possible to analyse and use that data in full due to technical issues related to the software used at the time of the study and the practical issue of time constraints. This is an unfortunate limitation as it is believed that analysing

that data in full would have offered more insights into students' actual use of the device for language learning and provide a more complete picture of the issues at hand.

7.5 Recommendations for Further Research

On the basis of the above limitations and the findings of this study, it is possible to recommend further areas of research. Firstly, comparative studies could be carried out to look at the differences and similarities between male and female students in using tablet devices for language learning in Saudi Arabia. Other comparative studies could also examine the differences and similarities among different types of technology. Since the iPad devices used in this study are a common type of technology in the Saudi context, it might be useful to carry out a comparative study between three groups of participants: one using the iPad device, another a smart phone, and a third one using a laptop.

Secondly, it might be interesting to consider using tablet devices to learn other skills such as reading and writing, and study the impact of implementing the same project in learning a target language other than English. This is due to the fact that most learning applications used in this study were provided in English. Thus, it would be interesting to see if students learning other languages can benefit and utilise the device in a similar way to those in the current study.

Thirdly, a close examination of the language learning that takes place in a tablet assisted language learning environment is recommended. More empirical studies are needed to examine whether the use of tablet device for language learning can have a direct impact on students' language learning.

Finally, since this study was student-focused research, it would be beneficial to conduct a study to investigate teachers' perceptions and concerns in regard to implementing tablet device technology into a language course to improve students' autonomous approach to learning. There is considerable potential for further research to experience the same project from the point of view of a teacher to provide further insights into the challenges they might encounter in implementing such a project. Thus, an alternative research design might consider using action research in which teachers in an EFL classroom are personally involved in the process of reflection, solving technical issues, and developing their own practice in teaching English supported by tablet devices. Such insightful data can help in encouraging the wider use of MALL in higher educational institutions. Indeed, action research could help address the needs of teachers in a natural rather than a research setting.

7.6 Final Remark

In this research, I played multiple roles in which I designed, researched, taught, and solved technical issues in the learning setting where this study was conducted. Being a novice researcher at the beginning of this study, I made the best attempts to communicate well with other colleagues, be critical in my reading and interpreting of others' work, evaluating different perspectives, implementing change, and seeking help where appropriate. The whole process was a continuous test of my abilities, knowledge, and willingness to adapt. In fact, being able to conduct this study provided me with the opportunity to understand learning as a participant and a teacher as well. Without such an opportunity, I would never have been able to understand the challenges encountered by teachers in their classroom and could easily blame teachers for any limitation if this research was conducted by other teachers. Instead, this study helped me realize my uncertainty, articulate my reflection, and develop my skills as a teacher and researcher. What I learnt has certainly been reflected in the actions I have taken to improve. One of the main lessons I have learned is the need to sustain a level of flexibility throughout the journey of this research. As a consequence of conducting this research, I believe that I have become a confident researcher with new questions I am keen to investigate, and new contributions that I would like to make.

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Appendices

Appendix 1: Background Questionnaire (BQ)

Please answer the following questions.

1. **Age:**

☐ 18-25

☐ 25-30

2. **How long have you been studying English language?**

    ……………………………………………………………………………………

3. **How do you rate your proficiency English language level? (Please tick one answer)**

    ☐ Beginner

    ☐ Lower intermediate

    ☐ Intermediate

    ☐ Lower advanced

    ☐ Advanced

4. **What was your English Language course result (first semester)?** :…………………………

5. **In your opinion, becoming proficient in English language for you is**

    ☐ Very important

    ☐ Important

    ☐ Not so important

6. **Why do you want to learn English? You can tick more than one box.**

    ☐ Interested in the language

    ☐ Interested in the culture

    ☐ Required to take a language course to graduate

    ☐ To get a better job opportunity

    ☐ To travel

    ☐ Other…………………………………………………………………………………

7. **Have you used any portable device before?**

    ☐ Yes

    ☐ No

    If your answer is **NO,** then **skip** the rest of this questionnaire.

8. What portable do you use? How often do you use your device? Where do you often use your portable? You can tick more than one box.

a. Laptop

☐ Daily   ☐ Weekly   ☐ Monthly   ☐ Don't use

     ☐ Inside the classroom

     ☐ Outside the classroom

     ☐ Both

b. Mobile phone

☐ Daily   ☐ Weekly   ☐ Monthly   ☐ Don't use

     ☐ Inside the classroom

     ☐ Outside the classroom

     ☐ Both

c. iPad

☐ Daily   ☐ Weekly   ☐ Monthly   ☐ Don't use

     ☐ Inside the classroom

     ☐ Outside the classroom

     ☐ Both

d. PDA

☐ Daily   ☐ Weekly   ☐ Monthly   ☐ Don't use

     ☐ Inside the classroom

     ☐ Outside the classroom

     ☐ Both

e. Other

☐ Daily   ☐ Weekly   ☐ Monthly   ☐ Don't use

     ☐ Inside the classroom

     ☐ Outside the classroom

     ☐ Both

  9. Do you have access to the internet at home (WIFI connection)?

     ☐ Yes

     ☐ No

10. Which of the following do you know how to use? You can tick more than one box.

☐ Access the internet   ☐ Download an application   ☐ Use an online dictionary

☐ Use the calendar   ☐ Post a comment to a blog   ☐ Send and receive emails

□ Set an alert for a due date □ Taking pictures □ Read an e-book

□ Access a social network site e.g. Facebook □ other (specify)………….............

11. Do you use your portable device inside the classroom?

☐ Yes

☐ No

If your answer is **NO,** then go to question **14.**

12. When you use your device inside the classroom, what sort of applications do you use?

You can tick more than one box.

□ Word processor □ Presentation □ Excel □ Web browser □ Email

□ Calculator □ Calendar □ Other (specify)…………........

13. Why do you use your portable inside the classroom? You can tick more than one box.

□ Note taking □ surfing the internet □ Asking questions □ Reading materials

□ Playing games □ Checking emails □ Reading e-books □ Taking pictures

□ Communicating with others □ Texting messages about the class content

□ other (specify)…………...

14. Do you use your portable device outside the classroom?

☐ Yes

☐ No

If you answered **NO,** then **skip** the rest of this questionnaire

15. When you use your device outside the classroom, what sort of applications do you use?

You can tick more than one box.

□ Word processor □ Presentation □ Excel □ Web browser □ Email

□ Calculator □ Calendar □ other (specify)…………........

16. Why do you use your portable outside the classroom? You can tick more than one box.

□ Note taking □ surfing the internet □ Asking questions □ Reading materials

□ Playing games □ Checking emails □ Reading e-books □ Taking pictures

□ Communicating with others □ Texting messages about the class content

□ other (specify)…………...

Thank you very much for your help and patience.

Appendix 2: Strategy Inventory for Language Learning Generic Version (SILLG)

Dear students,

The purpose of this questionnaire is to ascertain your opinion regarding your language learning experience with the iPad device. There is a set of statements relate to your autonomous language learning activities that you will be reflecting upon.

Direction: In order to investigate the Learner autonomy, will you please tick the closest answer to the following statements according to your true cases. There are no right or wrong answers to these statements. Just answer in terms of how well the statement describes you. If you have any questions, please feel free to ask.

Contact me at: h.f.albadry@newcastle.ac.uk

Statements and their meanings. Which answer is the most like you?

Never true of me: also includes 'almost never true of me'- means it does not happen very often in your learning behaviour (very rarely true of you).

Rarely: it happens occasionally in your learning behaviour (less than half of the time)

Sometimes true of me: it happens in a regular pattern in your learning behaviour (about half of the time

Often: it happens regularly and represents an obvious pattern in your learning behaviour (more than half of the time).

Always true of me: also includes 'almost always true of me'-means it happens almost all the time and represents a strong pattern in your learning behaviour (more than half of the time).

Part A					
Questionnaire Statements	Never	Rarely	Sometimes	Often	Always
1. I try to find as many ways as I can to use my English					
2. I actively look for people with whom I can speak English					
3. I use grammar games to improve my grammar skill					
4. I use a calendar to develop a weekly schedule for language learning e.g. time for outside of class practice in listening skill					
5. I use a notebook to prepare myself for an assignment e.g. writing down new expressions, structures, vocabulary.					
6. I plan to study a certain amount of vocabulary a day e.g. 5 words every day					
7. I have a clear goal for improving my English skills					
8. I prepare for an upcoming task such as a presentation by considering the nature of the task, what I have to know, and my current language skills					
9. I think about my progress in Learning English					
10. I clearly identify the purpose of the language activity					
11. I try to notice my language errors and find out the reasons for them					
Part B					
Questionnaire Statements	Never	Rarely	Sometimes	Often	Always
12. I use flashcards (a small card with two sides. On one side the new word is written and the definition or other information on the other side) or my notebook to remember new English words.					
13. I say or write new English words several times.					
14. I try to talk like native English speakers					
15. I practise the sounds of English by recording my speech and comparing it to that of a native speaker e.g. pronunciation and intonation					
16. I watch English language TV shows spoken in English					
17. I read for pleasure in English					
18. I use the dictionary to look up the meaning of new vocabulary items					

Part C					
Questionnaire Statements	Never	Rarely	Sometimes	Often	Always
19. If I don't understand something in English, I ask the other person to slow down or say it again					
20. I ask questions in English					
21. I try to check my answers with other students					
22. I practise English with other students e.g. having telephone conversations in English with each other					
23. I ask other proficient students and my teacher to correct me when I talk					
24. I get more work done when I work with others in group work e.g. work with other students to practice, review, or share information.					
Part D					
Questionnaire Statements	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
25. I feel motivated and work hard to learn English because I am in control of my learning					
26. I feel motivated to learn English because I can choose the topic of my task e.g. a presentation					
27. I feel motivated to Learn English because I can choose where to study					
28. I feel motivated to learn English because I can choose the time to study					
29. I feel motivated to learn English because I can choose with whom I want to study					
30. I feel motivated to learn English because I can use my course materials at any time					
31. I feel confident to ask my teacher for help by sending her an email					
32. I am more engaged in discussion related to my English task outside the classroom because I can post my thoughts using my device					

Thank you for your help and consideration

Appendix 3: Strategy Inventory for Language Learning iPad Version (SILLIP)

Questionnaire to investigate learner autonomy supported by the iPad device

Part A					
Questionnaire Statements	Never	Rarely	Sometimes	Often	Always
1. I try to find as many ways as I can to use my iPad to practise English learning					
2. I actively look for people with whom I can speak English					
3. I use grammar games apps on the iPad to improve my grammar skill					
4. I use the calendar app on the iPad to develop a weekly schedule for language learning e.g. time for outside of class practice in listening skill					
5. I use a notebook app such as istudiez, to prepare myself for an assignment e.g. writing down new expressions, structures, vocabulary.					
6. I plan to study a certain amount of vocabulary a day using the iPad e.g. 5 words every day using the flashcards apps					
7. I have a clear goal for improving my English skills					
8. I prepare for an upcoming task such as a presentation using different feature on the iPad e.g., camera, safari, and different apps e.g. pages and keynotes.					
9. I think about my progress in Learning English					
10. I clearly identify the purpose of the language activity by reading the instructions posted on the iTune course app					
11. I try to notice my language errors and find out the reasons for them					
Part B					
Questionnaire Statements	Never	Rarely	Sometimes	Often	Always
12. I use flashcards apps on the iPad e.g. Flashcard let to remember new English words.					
13. I say or write new English words several times.					
14. I try to talk like English native speakers by imitating those using apps like E-tutor on my iPad.					
15. I practise the sounds of English by recording my speech and comparing it to that of a native speaker using the recording feature on my iBook					
16. I watch English language shows spoken in English using my iPad e.g. Ted Talk app					

	Never	Rarely	Sometimes	Often	Always
17. I read for pleasure in English on my iPad using apps like Newsy, iBook					
18. I use the dictionary app to look up the meaning of new vocabulary items					

Part C					
Questionnaire Statements	Never	Rarely	Sometimes	Often	Always
19. If I don't understand something in English, I ask the other person to slow down or say it again					
20. I ask questions in English using the Ask3 app					
21. I try to check my answers with other students					
22. I practise English with other students e.g. having online conferences in English using Fuze meeting app on my iPad					
23. I ask other proficient students and my teacher to correct my speech using apps like voice thread on the iPad.					
24. I get more work done when I work with other in group work assignments e.g. work with other students to practice, review, or share information. using our iPads					

Part D					
Questionnaire Statements	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
25. I feel motivated and work hard to learn English because the iPad helped me control my learning e.g. using the iPad to search for information on the internet, practice specific skills with selected apps, create keynotes and multimedia presentations, and present and share my learning with my peers and my teacher.					
26. I feel motivated to learn English because I can choose the topic of my task e.g. a presentation					
27. I feel motivated to learn English because I can choose the location of my study					
28. I feel motivated to learn English because I can choose the time to study					
29. I feel motivated to learn English because I can choose with whom I want to study					
30. I feel motivated to learn English because I can access my course materials and iPad resources at any time					
31. I feel confident about asking my teacher for help using my iPad					
32. I am more engaged in class discussion outside the classroom because I can post my thoughts using the device					

Appendix 4: SILLIP / Arabic version

عزيزتي الطالبة،

ان الغرض من هذا الاستبيان هو الحصول عل ارائك حول التجربة التي خضتها في تعلم اللغة الانكليزية عن طريق استخدام جهاز الاي باد (iPad). يحتوي الاستبيان على مجموعة فقرات تتعلق بالنشاطات التي خضتها في عملية تعلم اللغة بشكل مستقل والمطلوب الاجابة عليها.

تأكدي أن ارائك سوف يتم التحفظ عليها بشكل سري والبيانات التي سيتم استحصالها منك سوف تستخدم كجزء في بحث دكتوراه، لذا قد يتم نشر النتائج المستحصلة من هذا البحث مع عدم نشر اية اسماء او معلومات شخصية فيها.

التعليمات: من أجل التحقق من مسألة استقلالية المتعلم نرجو منك اختيار الإجابة الأقرب إليك وحسب الحالة الطبيعية التي تعبر عنك. لا توجد هناك اجابة صحيحة أو خاطئة بخصوص هذه الفقرات. فقط أجب الفقرة بالشكل الذي تجده ينطبق عليك. إذا كانت لديك اية استفسارات يرجى طرحها.

تواصلي معي عبر البريد الالكتروني: h.f.albadry@newcastle.co.uk

الفقرات ومعانيها. أية اجابة تنطبق عليك؟

١. لا تنطبق علي بتاتاً: تشمل كذلك 'على الأغلب لا تنطبق علي بتاتاً' – تعني أن هذه الفقرة لا تحدث او لاتتوفر غالباً في سلوكك التعليمي (اي حالة نادرة جداً فيك).

٢. نادراً: أي تحدث بالمصادفة في سلوكك التعليمي (أقل من نصف الوقت).

٣. تنطبق علي في بعض الأوقات: أي أنها تحدث بشكل منظم نوعاً ما في سلوكك التعليمي (نصف الوقت تقريا).

٤. غالباً: أي أنها تحدث بشكل منظم وتمثل نموذجاً واضحاً في سلوكك التعليمي (أكثر من نصف الوقت).

٥. تنطبق على دائما: تشمل ايضاً على الأغلب تنطبق علي دائماً' – وتعني أنها تحدث في جميع الأوقات غالباً وتمثل نموذجاً قوياً في سلوكك التعليمي (أكثر من نصف الوقت).

قبل البدء بالإجابة يرجى مراقبة كم الوقت الذي تحتاجه لإنهاء ملئ الاستمارة.

دائماً	غالباً	بعض الأحيان	نادراً	بتاتاً	فقرات الاستمارة
					الجزء -أ-
					١. احاول ايجاد طرق كثيرة جداً لاستخدام الايباد (iPad)لممارسة تعلم اللغة الانجليزية
					٢. ابحث بشكل فعال عن الأشخاص الذين أستطيع أن اتحدث معهم باللغة الانجليزية
					٣. استخدم تطبيقات الألعاب الخاصة بالقواعد في الايباد (iPad)لتحسين مهاراتي في القواعد
					٤. استخدم تطبيق التقويم(calendar) في الايباد (iPad)لإعداد جدول اسبوعي في تعلم اللغة مثلاً تخصيص وقت خارج الصف لممارسة مهارة الاصغاء
					٥. استخدم تطبيق مدونة الملاحظات كـ istudiez او Note لأحضر نفسي لواجب معين مثلاً كتابة تعابير جديدة او تراكيب جمل او مفردات
					٦. اخطط لدراسة عدد معين من المفردات باستخدام الايباد (iPad)في كل يوم مثلاً خمس كلمات في اليوم الواحد
					٧. لدي هدف واضح لتحسين مهاراتي في اللغة الانجليزية
					٨. احضر نفسي لواجب قادم كتقديم شيء ما من خلال استخدام الخواص المتعددة في الايباد (iPad)، على سبيل المثال الكاميرا، الباحث العام safari،google وغيرها من التطبيقات
					٩. أنا أفكر في مستوى تقدمي في تعلم اللغة الانجليزية
					١٠. أنا احدد الغرض المقصود من النشاط اللغوي بشكل واضح من خلال قراءة التعليمات المذكورة على تطبيق الـ iTune course
					١١. أنا احاول أن الاحظ أخطائي اللغوية وإيجاد اسبابها

دائماً	غالباً	بعض الأحيان	نادراً	بتاتاً	فقرات الاستمارة
					الجزء -ب-
					١٢. استخدم تطبيقات البطاقات التعليمية في الايباد (iPad)مثلاً تطبيق الـ Flashcardlet لأتذكر كلمات انجليزية جديدة.
					١٣. أنا ألفظ او اكتب الكلمات الانجليزية الجديدة عدة مرات.

					١٤. أنا احاول أن اتكلم مثل الناطقين باللغة الانجليزية من خلال تقليدهم باستخدام تطبيقات كـ E-tutor في الاياد (iPad)
					١٥. أنا أتمرن على أصوات اللغة الانجليزية من خلال تسجيل كلامي ومقارنته بشخص انجليزي من خلال استخدام خاصية التسجيل الموجودة في الاياد (iPad)
					١٦. أنا اشاهد برامج اللغة الانجليزية المقدمة باللغة الانجليزية مثلا استخدام تطبيق الـ Ted Talk في الاياد (iPad)
					١٧. أنا اقرأ مواد باللغة الانجليزية للمتعة على الاياد (iPad)من خلال استخدام تطبيقات مثل الـ Newsy و iBook
					١٨. أنا استخدم تطبيق القاموس لأبحث عن معاني المفردات الجديدة

الجزء ج-					
دائماً	غالباً	بعض الأحيان	نادراً	بتاتاً	فقرات الاستمارة
					١٩. إذا لم أفهم شيئاً باللغة الانجليزية اسأل الشخص المقابل أن يقوله ببطء او يعيده
					٢٠. أنا اسأل اسئلة باللغة الانجليزية باستخدام تطبيق الـ Ask3
					٢١. أنا احاول أن اتأكد من صحة أجوبتي مع الطالبات الاخريات
					٢٢. أنا امارس اللغة الانجليزية مع بقية الطالبات مثلاً نجري محادثات جماعية على الانترنت باللغة الانجليزية من خلال استخدام تطبيق مثل Fuze في الاياد
					٢٣. أنا اطلب من الطالبات المتفوقات ومن الأستاذة أن يصححوا كلامي باستخدام تطبيقات كـ voice thread في الاياد
					٢٤. أنا انجز أعمال أكثر عندما أعمل مع الاخريات ضمن مجاميع عمل (groups)مثلاً أعمل مع طالبات اخريات لممارسة اللغة او المراجعة او مشاركة المعلومات من خلال استخدامنا لأجهزة الاياد

دائماً	غالباً	بعض الأحيان	نادراً	بتاتاً	فقرات الاستمارة الجزء -د-
					٢٥. أنا أشعر بالحماس وأعمل بجد لأتعلم اللغة الانجليزية لأن الايباد يساعدني أن اتحكم في مسألة تعلمي. على سبيل المثال استخدام الأيباد للبحث عن معلومات في الانترنت وممارسة مهارات محددة باستخدام تطبيقات معينة واعداد مدونة ملاحظات وعروض وسائط متعددة وتقديم ومشاركة خبرة تعلمي مع زميلاتي واستاذتي
					٢٦. أنا اشعر بالحماس لتعلم اللغة الانجليزية لأنني أستطيع أن اختار الموضوع الخاص بواجب معين مثلاً تقديم عرض
					٢٧. أنا اشعر بالحماس لتعلم اللغة الانجليزية لأنني أستطيع أن اختار موقع دراستي
					٢٨. أنا اشعر بالحماس لتعلم اللغة الانجليزية لأنني أستطيع أن اختار وقت دراستي
					٢٩. أنا اشعر بالحماس لتعلم اللغة الانجليزية لأنني أستطيع أن اختار مع من اريد أن ادرس
					٣٠. أنا اشعر بالحماس لتعلم اللغة الانجليزية لأنني أستطيع أن استخدم المواد الدراسية والمصادر المتوفرة في الايباد في أي وقت
					٣١. أنا اشعر بالثقة لأنني أقدر أن أطلب المساعدة من استاذتي من خلال استخدام جهاز الايباد
					٣٢. أنا انخرط أكثر في مناقشات تتعلق بواجبات الصف خارج الصف لأنني أستطيع أن أنقل أفكاري عن طريق استخدام جهاز الأيباد

شكراً جزيلاً لإجاباتك وتعاونك

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Appendix 5: Questionnaire Content Validation Table

Following is a table, which illustrates the sources of the questionnaire items i.e. Oxford's (1990) original items, modified items (highlighted), and items developed by the researcher based on themes extracted from the literature\ other studies.

To validate the questionnaire items, please:

- Check relevance and clarity of items
- Check sufficiency of items to measure different aspects of autonomy
- Check appropriateness of items to the educational level of first year undergraduate students
- Identify the categorisation of types of each individual strategy: cognitive strategy, meta-cognitive strategy, and socio\affective strategy following O'Malley and Chamot's (1990) typology of language learning strategy (only the developed items)

Part A					
Questionnaire Statements	Oxford's original item	Oxford's modified item	Researcher's developed item	Type of strategy	Comments
I try to find as many ways as I can to use my English	√			Mc	D\30
I try to find out how to be a better learner of English	√			Mc	D\33
I actively look for people with whom I can speak English		√		Mc	D\35
I take responsibility for finding opportunities to practice my English		√		Mc	DE\60
I try to download Apps that help me in using my English			√	Mc	Self-management Seeking practice opp.
I use grammar games to improve my grammar skill			√	Mc	Functional planning Rehearsing linguistic component
I take pictures and videos with my iPad to use it for an assignment			√	Mc	Functional planning Planning for an assignment
I use safari App on the iPad to search on the internet			√	Mc	Self-management Seeking practice opp.
I practise and learn the language by doing out of class activities			√	Mc	Self\ management Seeking practice opp.
I set an alert/alarm using my iPad for potential due date or test			√	Mc	organising
I write notes using the notes App on the iPad to remind myself of an assignment			√	Mc	organising
I plan to study a certain amount of vocabulary a day e.g. 5 words every day		√			DE56
I set up a goal for my reading e.g. practise skimming for one week			√	Mc	Setting goal
I manage my time very well			√	Mc	organising

Questionnaire Statements	Oxford's original item	Oxford's modified item	Researcher's developed item	Type of strategy	Comment
I prepare for an upcoming task such as presentation using different feature on the iPad e.g. camera, safari, and pages		√			DE\58
I have clear goal for improving my English skills	√				D\37
I think about my progress in Learning English	√				D\38
I clearly identify the purpose of the language activity	√				DE\59
I try to notice my language errors and find out the reasons for them	√				DE\62
I know my strengths and weaknesses in English study			√	Mc	Self-evaluating
Part B					
Questionnaire Statements	Oxford's original item	Oxford's modified item	Researcher's developed item	Type of strategy	Comment
I use electronic flashcards to remember new English words.		√		C	A\6
I say or write new English words several times.	√				B\10
I practice the sounds of English by recording my voice using the recorder on the iPad.		√			B\11
I watch English language shows spoken in English e.g. TED Talk.		√			B\15
I read articles or stories in English for pleasure using Apps like Newsy or e-book.		√			B\16
I use iBook App on the iPad to read on my free time			√		practicing
I use audio-visual aids on the iPad to enhance my learning			√		practicing
I actively look for other sources such as video and audio extracts to listen to			√		practicing

native speakers of English					
I take responsibility for finding Apps that help practising my listening and grammar skills			√		Practicing\ repetition
I use the online dictionary to look up the meaning of new vocabulary items			√		resourcing
I try to talk like native speakers of English using Apps like podcasts or E-tutor.		√			B\11
I use my iPad to look up something I did not understand or know during the class			√		resourcing
I play educational games on my iPad			√		resourcing
I read articles and stories on my iPad			√		Practicing naturalistically
I use Apps like skype and joinme to talk with others in English			√		Practicing naturalistically
Part C					
Questionnaire Statements	Oxford's original item	Oxford's modified item	Researcher's developed item	Type of strategy	Comment
I try to write down my feelings in the language learning diary App		√		SA	E\70
I keep a record of my study using the weekly diary			√		
I text my classmates about the level of my understanding in the class e.g. I got it, this is so difficult, I can't understand anything		√			E\71
When I don't understand something in English, I ask the other person to slow down or say it again		√			F\45
I practise English with others using Vsee and Joinme Apps		√			F\47
I try to learn about the culture of other countries by surfing the internet		√			F\50

I ask other students to verify that I have understood or said something correctly either in the class or outside the class using he social networking Apps		√			Fe\37
I make use of Apps like dropbox and google doc to receive and give feedbacks on our writing assignment			√		obtain feedback
I try to check my answers with other students			√		Asking for correction
I discuss the topic of my task with others			√		Cooperation Pool inf
I get more work done when I work with others in group work			√		cooperation
I make use of the social networking sites to chat with other students about my English learning			√		Talking about one's feeling
I ask my classmates about the points I don't understand via text messages			√		Asking for explanation
I have a regular language learning partner	√				Fe 76
I prefer to work in group			√		cooperation
I post a comment or respond to one using my iPad			√		Working with others

Part D	
Questionnaire Statements	Comment
I feel more motivated and work harder because I am more in control of my learning	
I feel more motivated because I have chosen the topic of my task e.g. a presentation	
I feel more motivated because I have chosen the location of my study	
I feel more motivated because I have chosen the time to study	
I feel more motivated because I have chosen with whom I want to study	
I feel more motivated because I can access my course and materials at any time	
I feel empowered, free, and in control when I use the iPad to learn English	
I feel more confident to ask for help using my iPad device	
I am more engaged in class discussion outside the classroom because I can post my thoughts using the device	

Thank you very much for your help and patience.

Appendix 6: O'Malley and Chamot's (1990) definitions of LLSs

O'Malley and Chamot's Typology of Language Learning Strategy

Learning Strategy	Description
Metacognitive	
Advance organisers	Making a general but comprehensive preview of concept or principle e in an anticipated learning activity.
Directed attention	Deciding in advance to attend in general to a learning task and to ignore irrelevant distractors.
Selective attention	Deciding in advance to attend to specific aspects of language input or situational details that will cue the attention of language input
Self- management	Understanding the conditions that help one learn and arranging for the presence of those conditions.
Advance preparation	Planning for and rehearsing linguistic components necessary to carry out upcoming language task
Self-monitoring	Correcting one's speech for accuracy in pronunciation, grammar, vocabulary, or for appropriateness related to the setting or to the people who are present
Delayed product ion	Consciously deciding to postpone speaking to learn initially through listening g comprehension
Self- evaluation	Checking the outcomes of one 's own language learning against an internal measure of completeness and accuracy
Cognitive Strategy	
Repetition	Imitating a language model, including overt practice and silent rehearsal.
Resourcing	Defining or expanding a definition of a word or concept through use of target language reference material
Direct physical response	Relating new information to physical actions, as with directives.
Translation	Using the language as a base for understanding and \ or reproducing the second language.
Grouping	Reordering or reclassifying and perhaps labelling the material to be learned based on common attributes.
Note-taking	Writing down the main idea, important points, outline, or summary of inforn1ation presented orally or in writing
Deduction	Consciously applying g rules to produce or understand the second language
Recombination	Constructing a meaningful sentence or larger language sequence by combining known element in any way
Imagery	Relating new information to visual concept s in memory via familiar easily retrievable visualizations, phrases, or locations.
Auditory representation	Retention of the sound or similar sound for a word, phrase, or longer language sequence
Key word	Remembering a new word in the second language by (1) identifying a familiar word in the first language that sound s like or otherwise se resembles the new word, and (2) generating easily recalled images of some relationship with the new word
Contextualization	Placing a word or phrase in a meaningful language sequence
Elaboration	Relating new information to other concepts in memory.
Transfer	Using previously acquired linguistic and\ or conceptual knowledge to facilitate a new language learning task.
Inferencing	Using available information to guess meanings of new items, predict outcome s, or fill in missing information
Social\ Affective	
Co-operation	Working with one or more peers to obtain feedback, pool information, or model a language activity
Question for clarification	Asking a teacher or other native speaker for repetition, paraphrasing, explanation and \ or examples.

Appendix 7: Focus Group Interview Schedule Guide

Purpose: The purpose of this focus group interview is to gain a better understanding of your experience with using the iPad for your learning during this semester.

Guidelines: This interview is meant to be a conversation about your experiences. With that, there are a few guidelines that we need to follow for this session.

If you have something to say, please do so. There is not a particular order to who may speak.

Please do not interrupt while someone else is speaking. It is important that everyone participate and have the chance to share her experiences.

You will receive a focus group note sheet. Use it to write down your comments, if someone else is talking.

We have about an hour for the group discussion. At some point we may need to stop and redirect our discussion.

If you have any questions about how we are going to proceed, please don't be hesitate to ask me.

Thank you very much for your help

1. Can you tell me about your language learning experience up to now?
2. How would you compare your experience with the traditional printed course, with the digital one?
3. What do you like/don't like most about your iBook? Why?
4. So, would you prefer to the delivery of the course on a tablet device such as the iPad?
5. Has using the iPad for your language study altered the way you learn? Can you explain? How?
6. Can you think of any academic uses of using the iPad outside the course?
7. What about in-class discussion, do you have any issues or difficulties to use the iPad as a supporting learning tool?
8. What do you think about the following sections:
- Warming up
- Text
- Nearpod
- Fuze meeting
- Ask3
- Voice Thread apps
9. Picture yourself getting ready for a class assignment (presentation), how do you prepare for them.
10. What about your process in preparing for the class, how do you gather the necessary information and what sort of techniques you follow?
11. Can you describe your role in a group work?
- asking questions for clarification
- listening to others
- offering opinion
- commenting on other's ideas
12. 12. Do you feel that you are less or more prepare in regard to your lesson content when you come to English class?
13. 13. How important would you say an iPad or iPad-like device is for effective language learning?
14. Do you think that the iPad helped in enhancing your language learning or it took away from it? Why do you think that?
15. Can you recall an event or an incidence to support your answer?

16. Now by the end of the course, can you assess your own learning i.e. what do you think of your English language level in comparison to your level at the beginning of the course?

17. Would you continue to use the iPad for future courses?

18. What advice would you give to a friend who wants to learn English based on your own experience in learning English?

19. Finally, is there any event or any comment you would like to talk about?

Appendix 8: Think Aloud Protocol Instruction

Think Aloud Instructions

In this procedure, I'm interested in what you think about while performing the language task. I will ask you to try to speak aloud as you're completing the task, from the very beginning till you finish. Please try to speak consistently into the microphone and in a clear voice. You don't need to plan out your speech. Just keep talking to yourself about your thought while you're doing the task not after. You can speak in English or Arabic.

Appendix 9: Think Aloud Protocol Task

‹ Posts

Think Aloud Task

13 April 2014 04:10 am   Mark as Unviewed

Hi,
 Your task is to do an online research to on an endangered species.Take notes on the steps being taken to protect this animal so that you can explain it in your own words. Then, submit two minutes recording using the Voice Threading , or Ask3 App. After you produce your pod cast, please make sure to email it to your group members and to me as well.
Tips

- Try to include some pictures in your podcast
- Try to prepare your script and materials before start recording your voice

Appendix 10: Transcription Conventions used in Think Aloud Protocol

Conventions used in transcribing the oral production of the language task are listed below

Symbol	Meaning
?	Raising intonation
!	Sharp rise at the end of a word
…	Pauses by speaker
xxx-	Unfinished utterance
….	Comments by transcriber
<….>	Utterances being read by subject
{….}	Subject writes and utters
^….^	Subject writes and not utters
[….]	Description in process
/…./	Arabic wording
/…./	Arabic translation
Italic	Arabic word spelled in English
C.V.C	Subject spells out a word

Adapted from Smagorinsky (1994)

Appendix 11: A Sample of Think Aloud Protocol Transcription

First Protocol

Total time: 43.10

Instructor: Now after describing to you what do I mean by think aloud, do you understand?

Students: Yes

Instructor: Do you know what is required?

Student: I think so.

Instructor: Ok then, can you state your name please?

Students: My name is A1

Instructor: Thank you. Ok go ahead you can start now.

Student : <think aloud task >,, < your task is do>.. <an online to search in an> E.N.D.A.N.G.E.R <species take on the steps then take on the protect animals > [Reading Silently]

Instructor: Ok, did you read the question?

Student: /Yes/

Instructor: What is going through your mind right now?

Student: /first thing I will search because there are things that I didn't understand./

Instructor: You didn't understand,, what is the thing you didn't understand?

Students: / It is-/ [reading silently]

Instructor: Why did you stop?

Student: / what?/ [laughing].../ Im trying to read it again to understand it. /

Instructor: Ok

Student: / the first thing/...note

Student: / write steps/../ no no because the steps./ [reading silently].. taking to protect!

Instructor: Ok, what will you do to understand?

Student: / I will translate it./

Instructor: Can you tell me more?

Student: / translation/... I mean google

Instructor: Google translate!

Student: yes

the student copied the sentence from her iTune-course screen and then pasted it into google translate app box

Student:.....

Instructor: What are you doing now?

Student: mmmmm.../ I'm going to translate it into Arabic./

the student navigated to google translate app and started to translate the sentence into Arabic

Student: ...

the student went back to the question

Instructor: Why did you go back to the iTune course screen?

Student: / Because I didn't understand google's translation/....

the student went out of the page

Instructor: What are you doing now?

Student: /I will open Ask3 then I will start recording/ [laughing]

Instructor: Ok

Student: / but first I need to look for the answers./

Instructor: and how will you do this?

Student: / I will use google search/

Instructor: Google... ok

Student: I will look for... about information about protects animal.

Student: ... endangered animals.

Instructor: ok

the student went back to google search

Student: .... {endanger animals}

Google search came up with different links about endangers animals

Student: there are many websites

Instructor: What are you going to do about it?

the students is navigating between pages

Student: / I'm moving between pages to choose something I can understand./

Instructor: Can you tell me more?

Student: / I read titles./ ...

Instructor: Titles!

Student: the web pages titles... the links

the students opened one of the links

Student: / I opened this one/

Instructor: Is that working for you?

Student: /I always open Wikipedia first because it is the best/

Instructor: Why do you think so?

Student: /because it's easy for me/ …/ I will read it first then I will translate it if I didn't understand/

the student is reading the information in Arabic language through the option provided via Wikipedia page

Student: /I will read in Arabic now/

Instructor: ok

Student: / now I will copy it… now… mmm.. I will write it ..I will write notes then I will record it in Ask3./

Instructor: ok

Student: / now I understood./

Instructor: Did you find what you were looking for!

Student: … [reading silently] … /I understood now. /

the student started to write her notes in English on a piece of paper

Student: I'm writing my notes in English…

Instructor: Are you writing it literally?

Student: Yes

the student stopped writing and started reading her information again

Instructor: Why did you stopped? What are you looking at?

Student: / I didn't understand the sentence./

Instructor: Ok, how will you figure it out?

English ./ / That is why I like Wikipedia.. because I easily can move between the Arabic and the English pages provided. /

Instructor: so how will you translate it to English,, I mean your notes!

Student: yes yes

Instructor: Yes what!

Student:/ I usually use google translate app/

Instructor: Yes

Student:/ and I have another app called *Translate*/

Instructor: Translation!

Student: Yes, *Translate*

Instructor: oh sorry... translate

Student: Yes

the student went back to the iTunes course page and started reading the question again

Student: / I will record using *Voice Thread*./

Instructor: Ok

Student: no no I mean Ask3.

Instructor: Why Ask3!

Student: / Because it is easier./

The students started launching the Ask3 app page

Student: / but I didn't write the name/

Instructor: Sorry

Student: I mean I didn't write the title of my recording.

Instructor: oh you mean your podcast

Student: Yes…. /I will go back to Wikipedia/… I will copy the information I got in English… I just remembered that I didn't copy them./

Instructor: Ok, what is going on in your mind now?

Student: / I'm thinking how would I record, and continue?/

Instructor: ok and what are you going to do about that?

Student: /I feel, it is easier but I'm confused…./

Instructor: Why are you confused?

Student: …[laughing]

the student started to summarise the information from Wikipedia

Student:/ I will go back to the question because I wanted to check whether the Ms. Wants us to talk generally or not?/…

the student is looking at the page and murmuring

Instructor: You are talking to yourself, what are you saying!

Student: / I'm reading the question to see what are the requirements exactly./ [reading silently]

Instructor: Ok, what were you thinking when you were silent a moment ago?

Student: / I read the question and knew exactly what it is required… I will write my notes to read it loudly, I will write it to record it/

Instructor: ok

Student: …[writing]……

Student: / sometimes… mmm sometimes I would ask my father or my friend before answering the question… instead of doing an online search./

Instructor: Ok, so you could ask someone who might know the answer!

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Student: / yes… I would ask them what the question is about … exactly so I can understand./.. I ask them to read the question for me and explain its meaning./

Instructor: very good

Student: / yes,. so now I understood that I need to write notes..[reading] < your task is to do an online search on an endangered species>..< take notes on the steps being taken to protect this animal, then explain it into your own words>

Instructor: so what did you understand from that?

Student:/ I understood that I need to write about the steps being taken to protect the animal… the one I chose to talk about,. the steps being taken to protect it from extinct and explain it into my own words /… then I have to record two minutes .. to record my voice using either *Voice Thread* or *ask3* … then when I finished I have to email my recording to my group.. then the Ms. gave tips to include some pictures mmm and to prepare my script before start recording/..[Laughing]

Instructor: Ok

Student: / then I'm going to change it,. I wont write it/

Instructor: Why did you decide to change this?

Student: / because I was talking generally…but now I know that I have to choose a specific animal then.. talk about how to protect it/…/ I will go back to Wikipedia./

the student is browsing Wikipedia page

Student: / I will start a new search,. I will use google search,. first I will search in Arabic/

Instructor: Ok

Student: / again I have many websites links,. I will choose this one/

Instructor: Why?

Student: / I chose this website because,. because its about .. a list of the most important endangered animals.. I chose this website./

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Student: / From the list I will choose one animal./

Instructor: What are you looking at?

Student: / there are animals… there is information about each animal., under each animal.. Pictures/

Instructor: Pictures!

Student: / I mean there are different pictures of animals … and there is information under each picture., the pictures make the search easier./

Instructor: Can you explain!

Student: / because there are some animals., some of the names of the animals… I mean I can see the name of the animal but I don't know how it looks like… so I can figure this out from the pictures./

Instructor: Yes, so what did you choose?

Student: / I will choose the turtle/.. Turtle… but I don't know what is the meaning of /gaba/ (jungle)

Instructor: How will you figure this out?

Student: / I will translate it/… I will translate it using google translate… I have the meaning now… Its *Turtle Jungle*/

Instructor: Ok, now what are you going to do?

Student: / I will choose a picture and save it., from the website page/… / now I will read the information under the picture … I will copy it then I will write my notes to read it later * the student means that she will record it later*

Instructor: Is there anything else you're thinking about it now?

Student: / I, I, mmm I want to take the thing in the beginning.. something.. the information I changed… then I will start./

Instructor: Can you explain more!

Student: / now I will go back to the information I got at the very beginning to use it as introduction/.. / now I will copy the information… I will translate it in google/

Student: / now I'm trying to figure out … there are words that,, some words I can't pronounce them. / [reading]

Instructor: What are you going to do about it?

Student: / I will ask my father. / … / usually I ask / … / my father / .. / but because my father is not around I will use google translate. / … / using the same app, I will copy and paste the word then I will listen to it. /

Instructor: Ok

the student listened to google translate word modelling

Student: long pause [laughing]

Instructor: Why do you laugh?

Student: / because I lost what I was writing. /

Instructor: Ok

the student went back to google search

Instructor: What are you doing now?

Student: / because… because I didn't write it all,, I will write all the information now, /../ I will go to Wikipedia again to take the information,, I will use it for introduction, /

Student: / I will change the language to English,, to copy the information. / [Writing]

Instructor: How are you doing this?

Student: I,, / I feel… yes there are some words that I want to listen to its pronunciation. /

Instructor: Ok

Student: mmmm,, / sometimes if I don't know how to pronounce some difficult words I check them in google or ask someone to pronounce it for me, /

the student turned her notebook to new page

Instructor: Why did you change your mind?

Student: / because... mmm.. because the recording will be long and the Ms. wants ... she said only two minutes. /

Instructor: Ok

Student: / I will choose something shorter... I will do a new search... I won't use the information I got before. /.../ I will take some of it.. I will summarise it. /

the student went back to the question

Instructor: What are you thinking now?

Student: / I want to read the question again to make sure that I understand the requirements. /... [reading]

Student: / I will search google again using new search key word /.. < information about animal endangered>

Instructor: Ok

Student: / I have more than one website /.../ I will choose this one. /

Instructor: Why?

Student: mmm.. the same title I want.. the same words in the title and in my keyword.. / now I can see pictures.. pictures of animals and each one has a link underneath /

Instructor: Ok

Student: / now I will read ... not everything.. only the head titles.. it makes it easier to write. / .. I will choose this title but there is a word that I don't know its meaning? /

Student: / I will translate it /... I write it in google but the spelling is incorrect... ok I have the word strange.. strange! / I decided to go back to google search.. I will use another key word /

Instructor: Ok

Student: / I will search into the same topic...

the student is moving between pages on her iPad

Student: / I will write / { introduction about endangers animals} .... / I got more than one link.. I will choose the first one because it has a similar words to that in my keyword /

Instructor: Is that working for you?

Student: / I will read and see /.. [reading silently] ... / it didn't work .. mm because it talks about the beginning in USA... I understood that it talks about endangered animals in America., so I decided to translate it to Arabic. /

the student copied the part she wanted to translate and pasted it into google translate

Student: < الانواع المهدده بالانقراض وقد تتعرض للخطر اي نوع من الانواع النباتيه والحيوانيه التي لها القدره على البقاء على قيد الحياه والتي لها القدره على الانشطه البشريه >

Instructor: What is going through your mind right now?

Student: / I feel ... I think this is what I was looking for., the information is clear for me. /.. / but I'm not going to say it all because it talks about the states .... I will take the information., some of the information to use it in my / introduction. / I will take only .. I will take the first sentence to use it in the / introduction.

Instructor: Ok

Student: / there is a word which I don't know how to pronounce it.. I will see how can I pronounce it /.....

the student played google translate (listen option) twice

Student: / I repeated the pronunciation twice because I didn't know how to pronounce it from the first time /.. now I will start recording because I know how to say it /

Instructor: Ok, what will you do now!

Student: / I will go to Ask3 ... first I will choose a picture.. the picture I saved before... I will organise my information and then start recording / ..../ I will read what I got from the website /... mmm... first thing the introduction about endangered animals. / I will read it again then I will organise it /

Instructor: ok

Student: / I will edit my information then plan my script/ …/ like summary/ [reading silently]

/ now I'm reading the word several times … the words which I couldn't pronounce/…[laughing]../ I will start recording now/

Student: < The endangered-> [laughing]… / the first thing I will say the question… no I will go back to iTune course to read the question again/…[reading].. ok I will go to Ask3 to do my task. < I will talk about endangered species any animal or plant> [laughing]

Instructor: Why did you stopped?

Student: / because I noticed that there are some words I didn't pronounce them correctly/

Instructor: Ok

Student: / I will delete it and record it again/…[reading silently]

the student is repeating the sentence several times in an attempt to pronounce the words correctly

Instructor: What are you going to do now?

Student: /I'm trying to repeat the words several times to know how to pronounce them/…/ then I will go back to google translate, I will write the words that I don't know how to pronounce them and listen to their pronunciation./

the student played google translate and listened to the word pronunciation three times

Student: / I realised that there is something I didn't complete… I will complete it now, I will write what was missing./

the student started writing in her notebook

Student: / now I will go back to Ask3… I will read my notes for the last time/..for the last time (سوي) practice.

Student: / I can't pronounce this word se, serrfe../

Instructor: Which word?

Student: this this,

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Instructor: oh survive!

Student: [laughing].. survfife ..servive..[laughing]

the student started recording her task

Student: < I will talk about endangered space..species..any animal or plant whose survive is endangered by human activity… some of animal endangered species is turtle jungle..which only 1000 turtle only in Colombia…

the student finished recording her podcast

Instructor: ok, thank you A1.. now do you think that there is anything you would like to add about what you were thinking as you worked?

Student: mmm / not really.. but I wasn't satisfied about what I have done.. I mean I'm not happy because I had to repeat mmm I mean change things a lot though it was the same topic?/

Instructor: Ok, if you have the chance to do the task again, how would you change the way you do it next time?

Student: / mmm…the introduction.. I will organise my introduction… I won't use the internet..I mean I will ask my father.. and the information I have..mmm I mean I won't use the information from the internet literally.. I will not copy paste it from google….[laughing]..I will come up with the main idea..then I will ask my friends .. and something from the internet ..and organise my script.. something like this you know../

Instructor: Ok, thank you so much A1 for your time.

Appendix 12: Validation of the Identification of Think Aloud Protocol

Definitions of language learning strategy and examples of protocol.

The validation aims at testing preliminary identification of strategies type in the protocol.

I would really appreciate it if you can state whether you 'agree' or 'disagree' with the identification of strategies and to make comments on the items with which you agree or disagree i.e. to give opinions in terms of agreeing or disagreeing with the identification of strategies done by the present researcher (myself).

The Think-aloud Protocols

First Protocol
Total time: 43.10

Instructor: Now after describing to you what do I mean by think aloud, do you understand?

Students: Yes

Instructor: Do you know what is required?

Student: I think so.

Instructor: Ok then, can you state your name please?

Students: My name is A1

Instructor: Thank you. Ok go ahead you can start now.   _C31 ✓_

Student : <think aloud task >.. < your task is do>.. <an online to search in an> E.N.D.A.N.G.E.R <species take on the steps then take on the protect animals > [Reading Silently]

Instructor: Ok, did you read the question?

Student: /Yes/

Instructor: What is going through your mind right now?   _C15 ✓_

Student :/first thing I will search because there are things that I didn't understand./

Instructor: You didn't understand.. what is the thing you didn't understand?

Students: / It is-/ [reading silently]

Instructor: Why did you stop?   _assa C13 ✓_

Student: / what?/ [laughing].../ Im trying to read it again to understand it./

Instructor: Ok

Student: / the first thing/...note

Student: / write steps/../ no no because the steps./ [reading silently].. taking to protect!   _C31 ✓_

Instructor: Ok, what will you do to understand?

Student: / I will translate it./   _No ✓_

Instructor: Can you tell me more?

Student: / translation/... I mean google

Instructor: Google translate!

Student: yes

the student copied the sentence from her iTune-course screen and then pasted it into google translate app box

Student:....

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Instructor: What are you doing now?

Student: mmmmm.../ I'm going to translate it into Arabic./ 16

the student navigated to google translate app and started to translate the sentence into Arabic

Student: ...

the student went back to the question

Instructor: Why did you go back to the iTune course screen? 7

Student: /Because I didn't understand google's translation/....

the student went out of the page

Instructor: What are you doing now?

Student: /I will open Ask3 then I will start recording/ [laughing]

Instructor: Ok

Student: / but first I need to look for the answers./

Instructor: and how will you do this? 3

Student: / I will use google search/

Instructor: Google .. ok

Student: I will look for .. about information about protects animal.

Student: ... endangered animals. 5. ? (self-monitor

Instructor: ok

the student went back to google search

Student: .... {endanger animals}

Google search came up with different links about endangers animals

Student: there are many websites

Instructor: What are you going to do about it? 26

the students is navigating between pages

Student: / I'm moving between pages to choose something I can understand./

Instructor: Can you tell me more?

Student: / I read titles./ .. 27

Instructor: Titles!

Student: the web pages titles... the links

the students opened one of the links

Student./ I opened this one/ 26

Appendix 13: Student Diaries Instructions

After completing your unit assignment, you are required to write a reflective paper in which you are going to evaluate, report, and reflect on what you have learned from your experience in learning English via the iPad.

Instructions

The diary does not have to be an essay-like cohesive piece of writing but it should not fall apart into separate unrelated sentences either. The recommended length is 150-300 words.

You may write your diary either in English or Arabic.

You should return your diary to Mrs. Haifa either by e-mail *h.f.albadry@outlook.com* or as a paper copy.

Your dairy could be a notebook, an electronic document or an app. Choose the method that works best for you!

Pick a quiet time and place to write, free of pressing obligations and distractions. Remember that this is a special time for you to reflect on your language learning.

What should you write about?

Write about any factors affecting your learning process. Are you studying alone or in a group? How does this change your understanding? Does using the iPad facilitate this kind of learning?

Write down your feelings about and reactions to what you are studying and the new way in studying i.e. learning English via the iPad.

What did you learn? What was left unclear?

Guiding Questions

Although there is no strict way to write a learning diary, it may help you to have that structure to guide your writing. Here are some questions which can help your writing being consistent.

1. How did you carry out the task? Briefly explain the steps you went through to complete your assignment.
2. In your opinion, was the use of the iPad a worthwhile? Have the iPad resources helped you to understand better/ worse? Why & why not?
3. Did the use of the iPad allow you to interact with other students? Give an example to justify your answer.
4. Did you enjoy participating in a group discussion? Did you find the use of the iPad useful in this kind of activities? If yes, in what way?
5. Which part of the task you find puzzling, difficult?
6. How do you feel about the way you have approached the task so far?
7. What new knowledge, skills or understanding have you learnt today?
8. How satisfied are you with your learning?

السلام عليكم ورحمة الله وبركاته :-

من خلال تجربتي من خلال الأسابيع السابقة في اكتسبت مهارات في الأيباد لم أمتلكها وأم تكن عندي من قبل من في مثل استخدم من تطبيق key note لعمل عرض للشرائح لجميع المواد لأن بي استخد منها لنشا حذا الواجب أو حيث لا حظت أن البرنامج سهل الإستعمال من السهل أي يوم شخص أن يعمل فيه ولا حظت منه ميزة ليك موجوده في اللابتوب أن أينما كنت أستطيع أن أشتغل عليه ليس في مكانه محدود أو مجال محدود وأيضا استخدمت الموبايل في الدراسة لماده الواجب يوم السبت لأن كنت في الشاطئ وأم يكن لدى الكتاب فقط فتحت الأيباد و دخلت ع الإيميل و حملت الدروس اللي رطتها الملس مدرستي مكانه لي الدراسه من خلال الأيباد جدا أمريحة ولكن كان الخوف كل الخوف أن بالغلط وبظلمطه زر ينحذف البرنامج ومه الصعب إسترجاع البرنامج وبصراحة تحسنت مهارتي بالإرتفاع بشكل كبير حسبي أني استطيع أسعى إلى الموقع بالست وليس فقط في الكليه وبصراحه شرح الملس جداً ممتاز وبرنامج البرودوكجسارس كان جداً حلو حسن نستطيع أن نرسل الواجب عبرو من (إستعمال الأوراقه وكنت استخدم الكثري بشكل دوري فكانه لي الأيباد مثل الجوال والقلم التي احتاجه في كل وقت ومكانه وبصراحه أنا أول ما سمعت بتجربة التعليم الإلكتروني توقعت بصراحه أنها ما مثلد لكن اكتشفت العكس لا تحتاج ميه لكتاب ولاقلم ولا لدكشري تحملين لي بجرد جهاز أيباد

في البداية لما انشرح لينا عن البحث حسينا بحماس هائل لهل تجربه و مازال مستمر وهل بحث عن جد ساعد في تطوير مهارة اللغة عدنا بحيث أنا في دراستنا السابقة لمقرر اللغة كان هل كتاب مهمل عدنا بشكل كبير ماكنا نطرق للمهرات لي فيه بحيث ماكنا نحل فيه الا ال Vocabulary وكانت المس احيان تسمعنا شريط و تخلينا نحل الأسئلة و نعطيها الورق تصححه بدون أي مناقشه على الشريط لي سمعناه كان التركيز على لكتاب الثاني و متى لازم نخلصه عشان للاختبار بس لما جثنا هل فرصه عشان نشارك في هل بحث تعلمنا اشياء واجد و اكتسبنا مهارات ماكنا نحاول حتى أنا نساعد أنفسنا على تطويرها بس حسيت أنا اكتسبناها من الشرح الوافي للمس و أنا كل شيء يجي بعده أنا لازم نطبق على لي ادخناه من خلال الواجب لي ما كان نحاتي فيه الدرجة لي رح نحصلها منه بس نعرف ادا اتقنا المهارة أو لا وكنا شيء جميل تفاعل المس معانا من خلال التشجيع و الثناء علينا و تعلمنا وين الخطاء عدنا وشلون نصححه هذا لي خلانا نتفاعل وي الموضوع هذا لي خلانا نسوي الواجب لي ماكنا نحس انه واجب بل كنا نحس انه تدريب على لي اخذناه و مش ملزمين انا نسويه و أنه شيء لمصلحتنا فبهل شعور صرنا ما نقول عدنا واجب بل رح ندرب على لي اخذناه عشان نتحسن باللغة وكان له دور فعال بحيث أنا فيه كان بنات ما يشاركوا ولا لهم حس في لكلاس بحيث أنهم كانوا غير مبالين بالمادة بس احين حسيت أنهم تغيروا وبالفترة الثانيةً بدوا يشاركوا ويتفاعلوا معا المقرر وبدأوا فعلا يتحسنون

لي محابيته

أنا في البداية ماكنا متعودين على استعمال الآباد للدراسة بل كنا اكثر استعماله للعب بس احين تعودنا وحسينا فعلا شلون الاستعمال الإيجابي و المفيد لهل جهاز وأنا ماكنا نعرف نستعمل التطبيقات وكانت تأخذ منا وقت طويل في البداية بسبب مشاكل أنا ماكنا نعرف و مشاكل الأكاونت بس لما تعودنا و الكل سجل الأكاونت صرت المسائلة بسيطة وسهل أنا نحل كل شيء بسرعة

((دائما البدايات تكون صعبة ولاكن الصعوبة تكمن بمن سوف يواجها ويصمد ليصل لغايته ففي منتصف الأزمات يولد النجاح))

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Appendix 15: Oxford E-Book Access Codes

Oxford Digital Product

Comment: HA241020313
Your Purchase Order Number:
Order Date (yyyy/mm/dd): 2013-10-28
OUP Account Number:

Collection Name: HA241020313

No	Product name	ISBN	Number of codes required	Number of activations required per code	Validity Activation date(Optional) (yyyy/mm/dd ~ yyyy/mm/dd)	Expiration date (yyyy/mm/dd)
1	IPORT Q TAB 4 SB L&S W/ONL PRAC PK	9780194040440				
			26	2	2013-10-28~2015-01-28	2015-01-28

Your codes

No	Codes	Code URL	No	Codes	Code URL
1	4CAF849E	http://olb.oup.com/app/?code=4CAF849E	2	AF64BD6F	http://olb.oup.com/app/?code=AF64BD6F
3	6B732CC1	http://olb.oup.com/app/?code=6B732CC1	4	03F50E6C	http://olb.oup.com/app/?code=03F50E6C
5	C09602D1	http://olb.oup.com/app/?code=C09602D1	6	7C190E84	http://olb.oup.com/app/?code=7C190E84
7	E3C17B69	http://olb.oup.com/app/?code=E3C17B69	8	34371EAC	http://olb.oup.com/app/?code=34371EAC
9	31A121C7	http://olb.oup.com/app/?code=31A121C7	10	D4E04FB7	http://olb.oup.com/app/?code=D4E04FB7
11	633E4DA8	http://olb.oup.com/app/?code=633E4DA8	12	A6AF3004	http://olb.oup.com/app/?code=A6AF3004
13	2EB83D98	http://olb.oup.com/app/?code=2EB83D98	14	1FEA700B	http://olb.oup.com/app/?code=1FEA700B
15	E4C99C8E	http://olb.oup.com/app/?code=E4C99C8E	16	D83E95D3	http://olb.oup.com/app/?code=D83E95D3
17	29AC9EE7	http://olb.oup.com/app/?code=29AC9EE7	18	88701ABA	http://olb.oup.com/app/?code=88701ABA
19	C83D61D2	http://olb.oup.com/app/?code=C83D61D2	20	527A6E14	http://olb.oup.com/app/?code=527A6E14
21	50C081B0	http://olb.oup.com/app/?code=50C081B0	22	7B2AE3B7	http://olb.oup.com/app/?code=7B2AE3B7
23	A02210DB	http://olb.oup.com/app/?code=A02210DB	24	AC1153CA	http://olb.oup.com/app/?code=AC1153CA
25	D7928F3D	http://olb.oup.com/app/?code=D7928F3D	26	FAF02D25	http://olb.oup.com/app/?code=FAF02D25

Appendix 16: Oxford E-Books Invoice

OXFORD
UNIVERSITY PRESS

Customer Services Contact	Credit Management
North Kettering Business Park Hipwell Road, Kettering Northamptonshire, NN14 1UA Tel: + 44 (0) 1536 452640 Fax: + 44 (0)1865 313474	Great Clarendon St, Oxford OX2 6DP Telephone: 01865 556767

Debit Note

Account No	Customer VAT Reg No	Payment Terms	Due date
3018956		Payable Immediately Due Net	29.10.2013

Page No	Date & Tax Point	Invoice No.
1 of 2	29.10.2013	161272466

VAT Reg No: GB125506730

Bill-To
University of Newcastle upon Tyne
Claremont Road
NEWCASTLE UPON TYNE
NE1 7RU

Ship-To
Haifa Albadry
University of Newcastle upon Tyne
Claremont Road
NEWCASTLE UPON TYNE
NE1 7RU

Any damage or shortage must be notified within 14 days of receipt.

Qty	ISBN-13	C of O*	Title	Author	List Price	Disc%	Net Price	Net Value(GBP)	#
			Customer PO No: HA24102013						
			No payment is required for this invoice. £892.20 has already been received.						
26	9780194040440		IPORT Q TAB 4 SB L&S W/ONL PRAC PK		28.50	0.0	28.50	741.00	
			VAT on 741.00 at 20.00%					148.20	

Country of Origin

VAT Summary	Totals	
VAT on 743.50 at 20% = 148.70	Subtotal (GBP):	741.00
	VAT:	148.20
	Delivery charge:	2.50
	Delivery charge VAT:	0.50
	Total:	892.20
	Less received:	0.00
	Amount due (GBP):	**892.20**

. & O. E. All goods are sold subject to our Conditions of Sale in force at the date of this invoice. Copies of the Conditions of Sale applicable to your order are available on request.

Appendix 17: Screenshots of Oxford E-Book

C Think about some important characteristics of a leader. Check (✓) the three characteristics you think are most important. Compare your answers with a partner.

Important Leadership Characteristics

- ☐ intelligent
- ☐ independent
- ☐ considerate
- ☐ courageous
- ☐ patient
- ☐ honest
- ☐ kind
- ☐ confident

D Discuss these questions in a group.

1. What kinds of people become leaders?
2. What are some characteristics of people who are not good leaders?
3. Abraham Lincoln, president of the United States from 1861–1865, once wrote, "If you want to test a man's character, give him power." What do you think he meant?

4   **UNIT 1** | How does power affect leaders?

LEARNING OUTCOME

Give a presentation about effective leadership and how to avoid the negative effects of power.

▶ Do you want to know more about leadership and power? Click here to watch a video.

Unit QUESTION

How does power affect leaders?

PREVIEW THE UNIT

A Discuss these questions with your classmates.

Have you ever been a leader? For example, have you ever been in charge of a group at school or been the captain of a sports team? If so, what challenges did you face as a leader?

Think of a leader you admire. What makes this person a good leader?

Look at the photo. What different images do you see that show leadership?

B Discuss the Unit Question above with your classmates.

◀) Listen to *The Q Classroom*, Track 2 on CD 1, to hear other answers.

3

3 / 256

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Appendix 18: Screenshots of iTune U Course

Appendix 19: Log File Analysis Form

Date	Time	Application	Purpose	Note
	05.23.25	Ask3	View discussion of the classroom related to the homework question	Outside classroom
	10.19.13	Ask3	Viewing other student's answers to the homework question	On Campus before the lesson
	10.47.55	Oxford iBook	Going through listening exercise	During the lesson
	11.10.16	Oxford bookshelf	Reading a pop-up message regarding Oxford app update	During the lesson
	11.29.42	Oxford iBook	Solving vocab exercise	During the lesson
	11.50.31	Oxford iBook	Reading the passage related to the lesson and trying to do the homework	During the lesson
	12.21.29	Oxford iBook	Solving vocab exercise	During the lesson
	13.29.06	iPad main page	No activity	On Campus
	14.41.31	Ask3	Having a technical problem with her bulletin board (an error message)	On campus
	16.04.34	Ask3	Accessing Ask3 board	Outside classroom
	17.51.06	Oxford iBook	Reading through the grammar exercise	Outside classroom
	19.10.18	Oxford iBook	Practicing listening and solving questions related to the lesson covered	Outside classroom
	19.48.57	Ask3	Accessing Ask3 board	Outside classroom
	20.32.16	iPad main page	No activity	Outside classroom
4/2/2014	21.18.07	Oxford iBook	Writing a sentence related to the listening extract from the passage covered + some Arabic translation	Outside classroom/ home
	22.18.16	Safari	Watching Voicethread tutorial for the iPad	Home (night time)
	23.33.00	Fuze	Trying Fuze app	Home/ night time
	01.25.20	Safari	Downloading themes	Home/ after midnight
	23.35.59	iPad setting	iTune and app store setting	Outside classroom

Providing students with an individual iPad provides an opportunity to enhance each student's overall learning experience. Utilizing the iPads at Community College gives students the access to learn anywhere, anytime - both in classrooms and at home.

All iPads remain property of the researcher (Mrs. Haifa Albadry) until the end of the course. Mrs. Haifa reserves the right to confiscate and search a student's iPad to ensure compliance with the Acceptable Use Policy. Students in violation of the Acceptable Use Policy may be subject to but not limited to; disciplinary action, repossession, removal of content. In the event of repossession or confiscation, completion of all class work remains the responsibility of the student. Mrs. Haifa is not responsible for the financial loss of any personal files that are deleted.

Student Responsibilities:

Caring for the iPad

- Students are encouraged to purchase protective covers/cases for their iPads.
- The iPad screen is made of glass and therefore is subject to cracking and breaking if misused. Never drop nor place heavy objects (books, laptops, etc.) on top of the iPad.
- Only a soft cloth or approved laptop screen cleaning solution is to be used to clean the iPad's screen.
- Defacing of the iPad, in any way is prohibited (stickers, markers, etc.).
- To extend battery life, students should always turn off and secure their iPad after work is completed.
- Do not subject the iPad to extreme heat or cold (do not store in vehicles).

Safeguarding and Maintaining as an Academic Tool

- The iPad must be brought to school each day in a fully charged condition. Students need to charge their iPads each evening. Repeat violations (minimum of three days – not consecutively) of this will result in disciplinary action.

- If an iPad is left at home or is not charged, the student remains responsible for completing all c o u r s e w o r k as if they had use of their iPad

- Malfunctions or technical issues are not acceptable excuses for failing to complete an assignment, u n l e s s no other means of completion exist.

- Items deleted from the iPad cannot be 'undeleted', so backing up your work is very important. Work completed on the iPad should be e-mailed to your teacher's e-mail account.

- Preloaded apps may not be deleted.

- Memory space is limited. Academic content takes precedence over personal files and apps. In the case of memory space conflict, personal files/apps must be removed at the student's expense.

- Non-educational content is for personal use only and should not be shared in any manner, audio or visual, with other students.

- Sound must be muted at all times unless permission is obtained from the teacher. Students may bring headphones to use when a teacher deems it suitable.

- It is student responsibility to keep their iPad safe and secure.

- iPads belonging to other students are not to be tampered with in any manner.

- If an iPad is found unattended, it should be given to the nearest faculty/staff member.

- Inappropriate media may not be used as a screensaver or background photo.

Software on iPads/iOS Updates

- Students must only use apps associated with their iTunes account. Students cannot share iTunes accounts or apps with other students.

- Students will be required to have the set curriculum apps loaded on their iPad at all times, these will be determined by the teachers at the start of the course.

- All large downloads including game Apps, App updates, video need to be completed at home. You will need a wireless router/access point connected to the internet to achieve this.

- Updating your iPad to the new operating system is **strictly prohibited**.

Saving to the iPad/Backups

Students may save work to the applications on the iPad. It is also advised that students use iCloud (internet storage) or iTunes (sync to home computer) to back up the information on their iPad. Students will hand up assignments as specified by the individual teacher. It is the student's

responsibility to ensure that work is not lost due to mechanical failure or accidental deletion. iPad malfunctions are not an acceptable excuse for not submitting work.

Lost, Damaged or Stolen iPad

If the iPad is lost, stolen, or damaged, Mrs. Haifa must be notified immediately. iPads that are believed to be stolen can be tracked through Meraki, which the student is required to enroll in upon receiving the iPad. Lost iPads that cannot be recovered are capable of being remotely wiped. The student is responsible for the SR 2500 cost for replacing an iPad that is lost, stolen, or damaged.

The iPad is subject to routine monitoring by teachers, administrators, and the technology staff. Mrs. Haifa will periodically monitor iPad wireless activity. If the acceptable use policy is violated, the iPad may be remotely locked down, wiped, and/or confiscated.

<u>**Prohibited Uses Include:**</u>

- Accessing Inappropriate Materials - All material on the iPad must adhere to the values and mission of Community College. Students must abide by the same prohibited uses as the use of lab computers and laptops. Students are not allowed to send, access, upload, download, or distribute offensive, profane, threatening, pornographic, obscene, or sexually explicit materials.
- Illegal Activities - Use of the class's internet/E-mail accounts for financial or commercial gain or for any illegal activity.
- Violating Copyrights - Students are allowed to install apps on their iPad's, however the items downloaded and synced to the iPad must be in compliance with copyright laws.
- Cameras - Students must use good judgment and follow the predefined Community college rules of conduct when using the camera. The student agrees that the camera will not be used in the College. Camera will only use outside the Community College site. Student agrees not to take inappropriate, illicit or sexually explicit photographs or videos, nor will it be used to embarrass anyone in any way. Any use of camera's in restrooms or the locker room, regardless of intent, will be treated as a serious violation.
- Use of the camera and microphone are strictly prohibited in the classroom and hallways unless permission is granted by a teacher.

- Misuse of Passwords/Unauthorized Access - Students must set a passcode to their iPad to prevent other students from misusing their iPad. Any student caught trying to gain access to other students' accounts, files or data will be subject to disciplinary action.
- Malicious Use/Vandalism - Any attempt to destroy hardware or software.

Return this form on registration day

Every student must read and sign below:

I have read, understand and agree to abide by the terms of the foregoing iPad Acceptable Use Policy. I agree that in keeping with the philosophy of Dammam University/ Community College, it is ultimately my responsibility to make good choices when I use the iPad and computer network. Should I commit any violation or in any way misuse my access to course network and the Internet, I understand and agree that my access privilege may be revoked, and disciplinary action may be taken against me.

Name (Please print clearly) …………………………………………………….

ID Number……………………………………………………………………………

User signature…………………………………………………………………………

iPad Number: iPad/ H…………………………………………………….

Appendix 21: Participants Information Sheet

Newcastle University

Research Title

"Using Mobile Technology to Foster Autonomy among Language Learners"

Invitation

My name is Haifa Albadry. I am a Ph.D. candidate at the Newcastle University, UK. I am working on a project which seeks to investigate the extent to which iPad and iPad-like devices can contribute in developing student's autonomous language learning. More specifically, it attempts to explore whether the multi-modal functionality and affordances of the iPad, when utilized in a Mobile-learning environment and introduced in a teacher-guided EFL course, can encourage and motivate students to be more independent and take control over their learning.

Why you?

The research is aimed at a typical class of English language learners in Saudi Arabia. As a participant, you match the required audience of this project. In addition, I am familiar with Community College, the Head of the Department and teachers are prepared to allow me to work there. Your class is chosen at random using a convenience sampling technique, i.e. several classes in the college are equally suitable for my study, and the teacher of your class is happy for me to take over the teaching.

Do I have to take part?

No, taking part is voluntary. If you don't want to take part, you do not have to give a reason and no pressure will be out on you to try and change your mind. Please note, if you choose not to participate, this will not affect your marks in any way.

What will I have to do if I take part?

If you agree to participate, you will take part in the following

1. You will be asked to complete three questionnaires which will take about 30 minutes/each to be completed. There are not any right or wrong answers – we just want to hear about your opinions.

2. You will be invited to group interview with me which will last approximately an hour at the longest and the questions will be related to your language learning experience during the term. Interviews will be arranged at a time and place of your convenience and will be recorded on an audiotape.

3. You will be asked to write a weekly diary about your experience in using the iPad in your study.

4. You will be invited to participate in a think-aloud protocol activity in which you will be given a 60-minute session to complete a language-learning task, which will be similar to the ones you use to take during the course. You will ask to try to speak aloud as you're completing a language task, from the very beginning till you finish. You voice will be audiotaped.

5. Your use of the portable device i.e. the iPad, will be observed inside and outside the classroom by installing an online tracker software (iKey monitor software). The researcher will able to get some information such as your internet usage, your google-search terms. It also records which apps you use, if they are used, and for how long. The second software is 'Meraki Device Management system' which will be used to configure students' iPad devices. Meraki is useful in enabling the research to manipulate the iPad features. For example, disabling the use of the camera and game centre inside the college campus, which is helpful in eliminating distraction in the classroom. The software provides information about the installed applications though it does not determine whether the applications were actually used.

The analysis of log file will mainly focus on the screenshots captured by iKey monitor software. The screenshots will be examined visually by inspecting each and filling in a form that includes: date, time, application, purpose and notes. The form helps in determining the applications that you use in formal and informal settings and the reason for that Usage. As for the shots with no user activity;

these will not analyse. In addition, any information collected that is not relevant to the study will be destroyed immediately.

The iPads will be used only for educational purposes, so no private information is logged – only whether or you access the apps I have selected and installed, when and for how long.

- Upon completion of the course, the researcher will uninstall the software from your device.
- The project will take about 12 weeks to be completed (the second semester of the academic year 2013-2014).
- If you wish to withdraw no reason needs to be given. The wish to withdraw will be respected immediately at any stage, without question, and all data will be immediately destroyed.

What are the possible disadvantages and risks of taking part?

You will be expected to take part in a course which will lasts for about 10 weeks. The class runs for two consecutive hours (from 8-10 am) every day for 10 weeks. As for outside class learning, you will be expected to spend 5-10 hours every week to revise, practice, and learn what is covered in previous sessions. In addition, a weekly two-hour workshop session will be held every Tuesday during activity hours.

What are the possible benefits of taking part?

1. You will receive an iPad device in return for your participation.
2. You will be provided with the content needed to enhance your learning through a combination of face-to-face and online modes.
3. You will promote your collaborative learning and enrich the conversation among yourself and with your teacher.
4. You will be provided with enough practice of speaking and listening skills which are the main focus of your preparatory English course.

Will my taking part in the study be kept confidential?

All information you provide to us will be kept confidential. Only members of the research team will have access to it. The collected data will be used as a part of a Ph.D. project study. Therefore, results from this study may be published, but no names or identifying information will be included in the publication.

Your confidentiality guaranteed:

- The audio-tapes will be transcribed by me and I will analyse the transcripts.
- The tape will be stored securely in a locked drawer in my office. There will be no identifying details with the tapes or transcripts.
- The transcription will be seen and accessed by me and by other member of the research team (my supervisors, two translators).
- The two translators will be asked to sign a data confidentiality agreement in which they will confirm that they will not keep any data in their possession. The researcher also will take care to remove any information that may lead to your identity.
- All tapes and transcripts will be stored securely.
- All tapes and transcripts will be destroyed within 12 months of successful completion of my degree.

What do I do now?

Think about the information on this sheet, and ask me if you are not sure about anything. If you are willing to participate, please indicate in a return e-mail to me, simply stating yes or no.

I have attached a copy of the consent form for those of you who might be willing to consider further participation. The consent form will not be used to identify you. It will be filed separately from all other information. If, after the discussion, you want any more information about the study, contact me or my supervisors via e-mail.

E-mail : h.f.albadry@newcastle.ac.uk

My Supervisors' emails: scott.windeatt@newcastle.ac.uk

THANK YOU VERY MUCH FOR YOUR HELP

Appendix 22: Consent Form

Project title: Using Mobile Technology to Foster Autonomy among Language Learners

Declaration of Consent

It is a university requirement that all the respondents give their formal consent to take part in any research. For this reason, could you please sign and date the declaration below.

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.
    a. YES/NO
2. I understand that all the data will be kept confidential and I will be anonymous in the research report.
    a. YES/NO
3. I know that the data gathered from this project will be used for the purpose stated in the Participant Information Form.
    a. YES/NO
4. I understand that participation is voluntary and that withdrawal from the project is possible at any time without needing to give a reason.
    a. YES/NO
5. I agree to take part in the above study and I understand my interview transcription, my think aloud protocol transcription, my diaries, and the data collected from my iPad by the two installed online tracker software are to be used only for the purposes of this study, including any publication arising out of the study. You will not be identified or identifiable in any publication arising from this study.
    a. YES/NO
6. I agree to the interview, think aloud protocol being audio recorded and understand that the audio recordings will be securely stored in the research base, and destroyed within 12 months of the completion of the final study report.
    a. YES/NO

Name of participant: ....

Signed: ....

Date: ....

Name of researcher: Haifa Albadry

Signed: ....

Date: ....

If, after signing the form, you want any more information about the study, contact me or my supervisors via e-mail.

E-mail : h.f.albadry@newcastle.ac.uk

My Supervisors' emails: scott.windeatt@newcastle.ac

THANK YOU VERY MUCH FOR YOUR HELP!

Appendix 23: Statistical Analysis of SILLG and SILLIP Questionnaires

Statistical Analysis of SILLG

Table 30: The means, and the standard deviations of LLSs pre-study

Strategy Category\ Part	SILLG Item	Mean	Standard Deviation	Interpretation of Mean
Metacognitive Part A	I try to find as many ways as I can to use my English	3.8	.87287	High
	I actively look for people with whom I can speak English	3.4	.81064	Med
	I use grammar games to improve my grammar skill	2.8	.88909	Med
	I use a calendar to develop a weekly schedule for language	2.2	.88909	Low
	I use a notebook to prepare myself for an assignment	2.9	1.30018	Med
	I plan to study a certain amount of vocabulary a day	2.9	1.01419	Med
	I have a clear goal for improving my English skills	3.9	1.09109	High
	I prepare for an upcoming task such as a presentation by considering the nature of the task	2.1	1.10841	Low
	I think about my progress in Learning English	4.3	.79582	High
	I clearly identify the purpose of the language activity	3.2	1.20909	Med
	I try to notice my language errors and find out the reasons for them	3.7	1.00712	High
Cognitive Part B	I use flashcards	2.0	1.16087	Low
	I say or write new English words several times.	4.0	1.20317	High
	I try to talk like native English speakers	3.9	1.09109	High
	I practice the sounds of English by recording my speech and comparing it to that of a native speaker	2.3	1.31656	Low
	I watch English language TV shows spoken in English	3.9	1.27615	High
	I read for pleasure in English	2.7	1.05560	Med
	I use the dictionary to look up the meaning of new vocabulary items	3.9	1.37495	High
Social Part C	If I don't understand something in English, I ask the other person to slow down or say it again	3.9	.88909	High
	I ask questions in English	3.2	1.03049	Med
	I try to check my answers with other students	3.8	1.03049	High
	I practise English with other students	2.1	1.15264	Low
	I ask other proficient students and my teacher to correct me when I talk	3.2	1.09109	Med
	I get more work done when I work with others in group work.	3.6	1.11697	High

Table 31: The means, and the standard deviations of LLSs 12 weeks after the start of the study

Strategy Category\ Part	SILLG Item	Mean	Standard Deviation	Interpretation of Mean
Metacognitive Part A	I try to find as many ways as I can to use my English	4.2	.81358	High
	I actively look for people with whom I can speak English	3.7	.90238	High
	I use grammar games to improve my grammar skill	3.4	1.32198	Med
	I use a calendar to develop a weekly schedule for language	2.7	1.11056	Med
	I use a notebook to prepare myself for an assignment	3.2	1.18924	Med
	I plan to study a certain amount of vocabulary a day	3.2	.74960	Med
	I have a clear goal for improving my English skills	4.4	.80475	High
	I prepare for an upcoming task such as a presentation by considering the nature of the task	2.9	1.23635	Med
	I think about my progress in Learning English	4.6	.80475	High
	I clearly identify the purpose of the language activity	4.1	.99523	High
	I try to notice my language errors and find out the reasons for them	4.1	1.09109	High
Cognitive Part B	I use flashcards	2.7	1.18924	Med
	I say or write new English words several times.	3.9	1.04426	High
	I try to talk like native English speakers	4.4	.74001	High
	I practice the sounds of English by recording my speech and comparing it to that of a native speaker	3.5	1.24976	High
	I watch English language TV shows spoken in English	4.0	1.02353	High
	I read for pleasure in English	3.3	1.35401	Med
	I use the dictionary to look up the meaning of new vocabulary items	4.2	1.20909	High
Social Part C	If I don't understand something in English, I ask the other person to slow down or say it again	4.0	1.02353	High
	I ask questions in English	3.8	1.04426	High
	I try to check my answers with other students	3.5	1.12335	High
	I practise English with other students	3.0	1.26491	Med
	I ask other proficient students and my teacher to correct me when I talk	2.9	1.27615	Med
	I get more work done when I work with others in group work.	3.9	1.22085	High

Table 32: The means, and the standard deviations of LLSs 24 weeks after the end of the study

Strategy Category\ Part	SILLG Item	Mean	Standard Deviation	Interpretation of Mean
Metacognitive Part A	I try to find as many ways as I can to use my English	4.4	.92066	High
Metacognitive Part A	I actively look for people with whom I can speak English	4.0	1.16087	High
	I use grammar games to improve my grammar skill	3.6	1.11697	High
	I use a calendar to develop a weekly schedule for language	3.0	1.07127	Med
	I use a notebook to prepare myself for an assignment	3.4	1.24403	Med
	I plan to study a certain amount of vocabulary a day	3.5	.98077	High
	I have a clear goal for improving my English skills	4.7	.65828	High
	I prepare for an upcoming task such as a presentation by considering the nature of the task	3.8	.99523	High
	I think about my progress in Learning English	4.7	.56061	High
	I clearly identify the purpose of the language activity	4.0	.86465	High
	I try to notice my language errors and find out the reasons for them	4.5	.67964	High
Cognitive Part B	I use flashcards	2.9	1.19523	Med
	I say or write new English words several times.	4.0	.92066	High
	I try to talk like native English speakers	4.6	.81064	High
	I practise the sounds of English by recording my speech and comparing it to that of a native speaker	3.3	1.27055	Med
	I watch English language TV shows spoken in English	4.0	1.07127	High
	I read for pleasure in English	3.8	1.28915	High
	I use the dictionary to look up the meaning of new vocabulary items	4.1	.85356	High
Social Part C	If I don't understand something in English, I ask the other person to slow down or say it again	4.1	.92839	High
	I ask questions in English	3.8	.81358	High
	I try to check my answers with other students	3.7	1.14642	High
	I practise English with other students	3.3	1.16087	Med
	I ask other proficient students and my teacher to correct me when I talk	3.6	1.24786	High
	I get more work done when I work with others in group work.	4.0	1.09545	High

Statistical Analysis of SILLIP Questionnaires

Table 33: The means, and the standard deviations of LLSs three weeks after the start of the study

Strategy Category/Part	SILLIP Strategy Item	Mean	Standard Deviation	Interpretation of Mean
Metacognitive Part A	I try to find as many ways as I can to use my iPad to practise English learning	4.0	.86465	High
	I actively look for people with whom I can speak English	3.5	.98077	High
	I use grammar games apps on the iPad to improve my grammar skill	3.4	.97346	Med
	I use the calendar app on the iPad to develop a weekly schedule for language learning	2.3	1.23828	Low
	I use a notebook app such as iStudiez, to prepare myself for an assignment	3.4	1.20317	Med
	I plan to study a certain amount of vocabulary a day using the iPad	2.9	1.33809	Med
	I have a clear goal for improving my English skills	4.4	.74642	High
	I prepare for an upcoming task such as a presentation using different feature on the iPad	3.2	1.43593	Med
	I think about my progress in Learning English	4.5	.67964	High
	I clearly identify the purpose of the language activity by reading the instructions posted on the iTune course app	4.1	.79282	High
	I try to notice my language errors and find out the reasons for them	4.0	1.09545	High
Cognitive Part B	I use flashcards apps on the iPad	2.6	1.28730	Med
	I say or write new English words several times.	3.7	1.06458	High
	I try to talk like English native speakers by imitating them using apps like E-tutor on my iPad.	3.7	.96609	High
	I practice the sounds of English by recording my speech and comparing it to that of a native speaker using the recording feature on my iBook	2.8	1.63153	Med
	I watch English language shows spoken in English using my iPad e.g. Ted Talk app	3.2	1.22085	Med
	I read for pleasure in English on my iPad using apps like Newsy, iBook	3.0	1.16087	Med
	I use the dictionary app to look up the meaning of new vocabulary items	4.3	.95618	High
Social Part C	If I don't understand something in English, I ask the other person to slow down or say it again	4.3	1.05560	High
	I ask questions in English using the Ask3 app	3.0	1.68749	Med
	I try to check my answers with other students	3.8	1.12335	High
	I practise English with other students e.g. having online conferences in English using Fuze meeting app on my iPad	2.6	1.32557	Med
	I ask other proficient students and my teacher to correct my speech using apps like voice thread on the iPad.	3.2	1.51343	Med
	I get more work done when I work with other in group work assignments e.g. work with other students to practice, review, or share information. using our iPads	3.6	1.36277	High

Table 34: The means, and the standard deviations of LLSs 12 weeks after the start of the study

Strategy Category/Part	SILLIP Strategy Item	Mean	Standard Deviation	Interpretation of Mean
Metacognitive Part A	I try to find as many ways as I can to use my iPad to practice English learning	4.5	.67964	High
	I actively look for people with whom I can speak English	3.6	.67612	High
	I use grammar games apps on the iPad to improve my grammar skill	3.2	1.12335	Med
	I use the calendar app on the iPad to develop a weekly schedule for language learning	2.1	.79282	Low
	I use a notebook app such as iStudiez, to prepare myself for an assignment	3.3	1.30931	Med
	I plan to study a certain amount of vocabulary a day using the iPad	3.0	1.20317	Med
	I have a clear goal for improving my English skills	4.6	.74001	High
	I prepare for an upcoming task such as a presentation using different feature on the iPad	3.7	1.35401	High
	I think about my progress in Learning English	4.7	.79582	High
	I clearly identify the purpose of the language activity by reading the instructions posted on the iTune course app	4.0	1.02353	High
	I try to notice my language errors and find out the reasons for them	4.5	.60159	High
Cognitive Part B	I use flashcards apps on the iPad	2.6	1.12122	Med
	I say or write new English words several times.	4.0	1.07127	High
	I try to talk like English native speakers by imitating them using apps like E-tutor on my iPad.	3.8	1.32737	High
	I practice the sounds of English by recording my speech and comparing it to that of a native speaker using the recording feature on my iBook	3.2	1.37495	Med
	I watch English language shows spoken in English using my iPad e.g. Ted Talk app	3.9	1.15264	High
	I read for pleasure in English on my iPad using apps like Newsy, iBook	3.3	1.58565	Med
	I use the dictionary app to look up the meaning of new vocabulary items	4.4	.74642	High
Social Part C	If I don't understand something in English, I ask the other person to slow down or say it again	4.2	1.04426	High
	I ask questions in English using the Ask3 app	3.0	1.32198	Med
	I try to check my answers with other students	3.6	1.02817	High
	I practise English with other students e.g. having online conferences in English using Fuze meeting app on my iPad	3.3	1.46059	Med
	I ask other proficient students and my teacher to correct my speech using apps like voice thread on the iPad.	2.8	1.28915	Med
	I get more work done when I work with other in group work assignments e.g. work with other students to practice, review, or share information. using our iPads	4.2	.88909	High

Table 35: The means, and the standard deviations of LLSs 24 weeks after the end of the study

Strategy Category/Part	SILLIP Strategy Item	Mean	Standard Deviation	Interpretation of Mean
Metacognitive Part A	I try to find as many ways as I can to use my iPad to practice English learning	4.6	.67612	High
	I actively look for people with whom I can speak English	4.4	.67612	High
	I use grammar games apps on the iPad to improve my grammar skill	3.5	.92839	High
	I use the calendar app on the iPad to develop a weekly schedule for language learning	2.8	1.16701	Med
	I use a notebook app such as iStudiez, to prepare myself for an assignment	3.2	.92839	Med
	I plan to study a certain amount of vocabulary a day using the iPad	3.6	1.24403	High
	I have a clear goal for improving my English skills	4.6	.58959	High
	I prepare for an upcoming task such as a presentation using different feature on the iPad	4.2	.70034	High
	I think about my progress in Learning English	4.9	.21822	High
	I clearly identify the purpose of the language activity by reading the instructions posted on the iTune course app	3.9	.99523	High
	I try to notice my language errors and find out the reasons for them	4.3	.90238	High
Cognitive Part B	I use flashcards apps on the iPad	2.9	1.09109	Med
	I say or write new English words several times.	4.4	.81064	High
	I try to talk like English native speakers by imitating them using apps like E-tutor on my iPad.	4.0	.86465	High
	I practice the sounds of English by recording my speech and comparing it to that of a native speaker using the recording feature on my iBook	3.6	1.07571	High
	I watch English language shows spoken in English using my iPad e.g. Ted Talk app	4.0	.76842	High
	I read for pleasure in English on my iPad using apps like Newsy, iBook	3.8	1.17918	High
	I use the dictionary app to look up the meaning of new vocabulary items	4.5	.74960	High
Social Part C	If I don't understand something in English, I ask the other person to slow down or say it again	4.3	.64365	High
	I ask questions in English using the Ask3 app	3.3	1.23828	Med
	I try to check my answers with other students	3.6	1.20712	High
	I practise English with other students e.g. having online conferences in English using Fuze meeting app on my iPad	3.6	1.12122	High
	I ask other proficient students and my teacher to correct my speech using apps like voice thread on the iPad.	3.5	1.16701	High
	I get more work done when I work with other in group work assignments e.g. work with other students to practice, review, or share information. using our iPads	4.4	.92582	High