# The Effectiveness of Using the IPads as an M-learning Devices for Developing ESL Vocational Learners' Speaking and Listening Skills Based on Social Constructivist Model

# فاعلية استخدام الاجهزة اللوحية المحمولة في تطوير مهارتي التحدث و الاستماع لدى طلاب التعليم المهني كمستخدمي اللغة الانجليزية كلغة ثانية خلال نموذج بنائي إجتماعي


**By**

**Mahes Ali AlOlaimat, M.ED.**


A thesis submitted to the Faculty of Education

in fulfillment of the requirements for the degree of

**DOCTOR OF PHILOSOPHY**

at

The British University in Dubai

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**Abstract**

*Integrating technology into teaching and learning seeks to empower education through the features that technology has to morph itself as indispensable to the ubiquity of learning. The implementation of technology in which the teachers, the learners and the context of learning are integrated constitutes an effective M-learning context for learning. As oral and listening skills are central in a virtual learning environment, an in-depth investigation of instructional strategies as well as the resultant indoor-outdoor interactions is crucial to develop these two skills. This study aims to investigate the role of using iPads in teaching vocational learners the oral and listening skills. Koole's (2009) social constructivist FRAME model, (backed up by three theories namely: Activity Theory, Connectivism Theory and Conversation Theory), was employed to evaluate the effectiveness of the iPad in developing these skills. Furthermore, the readiness for iPad implementation in vocational institutions, the strategies that learners use to develop their oral and listening skills as well as the teaching practices that teachers use are examined in this thesis study. Also, the effectiveness of the iPad as a teaching tool in developing vocational learners' oral and listening performance and competency is investigated.*

*A sequential explanatory mixed methods study has been conducted to achieve the research objective and to answer the research questions. Quantitatively, a questionnaire was designed for the first samples of 500 eleventh graders in Secondary Technical Schools out of which 274 questionnaires were returned. As for the qualitative part, two focus groups sessions were administered with eight teachers, two teacher trainers and two participants from the Curriculum Development Unit (CDU). Semi-structured interviews were conducted with the ten teachers and participant observations were conducted in the three research sites namely: Ajman, Abu Dhabi, and Al-Ain boys' campuses. The findings show a high percentage of respondents' readiness for iPad implementation. It is also demonstrated that students generate new strategies to accommodate to M-learning contexts. Besides, the iPad has been approved as an*

*effective teaching tool in developing vocational learners' oral and listening skills. Based on these findings, pedagogical implications and recommendations for educators, policy makers and teacher training programs are provided.*

## ملخص

إنّ العمل من أجل التّعلّم مدى الحياة في إطار اجتماعيّ بنائيّ واسع الانتشار يتطلّب بالضّرورة تّطبيقا للتّكنولوجيّا حيث يتكامل فيه المعلّمون، والمتعلّمون والسّياق التّعليميّ؛ لتشكيل بيئة تعليميّة تسهم في بناء سياق عمليّ للتّعلم في هذه الأيّام.

بما إنّ مهارتي التحدث والاستماع مهاراتان أساسيّتان عند الحديث عن بيئة التّعلّم الافتراضيّ، فإنّ البحث المستفيض في الإستراتيجيّات التّعليميّة كما في التّفاعلات داخل و خارج النطاق الدرسي تصبح مهمَّة لتطوير هاتين المهاراتين.

تهدف هذه الدّراسة إلى التحقيق في فاعليّة استخدام الأجهزة اللّوحيّة الإلكترونيّة (iPads) في تدريس مهارتي التحدث و الاستماع عند طّلاّب التعليم المهني.

وقد استخدمت الدّراسة نموذج الإطار البنائيّ الاجتماعي لكول (2009)، مدعومًا بالنّظريّات الثّلاث: نظريّة النّشاط، نظريّة التّرابطيّة ونظريّة المحادثة، لتقويم فاعليّة هاتين المهاراتين.

ووفوق ذلك، فإنّ الاستعداد لتطبيق استخدام الاجهزة اللّوحية الإلكترونيّة (ipads) في المعاهد المهنيّة، والإستراتيجيّات الّتي يتّبعها المتعلّمون لتطوير مهاراتهم الشّفويّة ومهارات الاستماع جنبًا إلى جنب مع الممارسات التّعليميّة الّتي يبديها المعلّمون قد اختبرت في أطروحة هذه دراسة.

وإضافة إلى ذلك، فقد تقصّت الدّراسة فاعليّة الاجهزة اللّوحية الإلكترونيّة (ipads) كأداة تعليميّة في تطوير الأداء الشّفويّ والاستماع لدى طّلاّب التعليم المهني وقدراتهم الاستماعية.

وقد أجريت دراسة إيضاحيّة متتالية بطرائق مختلطة لتحقيق هدف البحث ولإيجاد الإجابات عن أسئلة البحث. ومن النّاحيّة الكمّيّة، صمّمت استبانة للعيّنة الأولى الّتي تألّفت من 500 من طلاّب الصّفّ الحادي عشر في المدارس الفنّيّة، وعاد منها 274 استبانة. أماّ في الجزء النّوعيّ فقد نفّذت الدّراسة جلستين ركّزتهما على المجموعات مع ثمانية معلّمين، ومدرّبين اثنين للمعلّمين ومشاركين من وحدة تطوير المناهج (و.ت.م)؛ وقد أجريت مقابلات نصفيّة البناء للمعلّمين العشرة والمشاركين الاثنين.

وقد نفّذت حصّص مشاهدة في مواقع الدّراسة الثّلاثة وهي: مدارس الذّكور في عجمان، أبو ظبي والعين.

وتعكس نتائج الدّراسة نسبة عالية من الاستجابات الّتي تظهر الاستعداد لتطبيق استخدام الاجهزة اللّوحية الإلكترونيّة (ipads).

وتعكس الدّراسة أيضًا إستحداث الطّلاّب لإستراتيجيّات التّأقّلم مع سياقات التّعلّم الجوّال. وإلى جانب ذلك، أثبتت الاجهزة اللّوحية الإلكترونيّة (ipads) فاعليّتها في تطوير المهارات الشّفويةّ ومهارات الاستماع لدى طّلاّب التعليم المهني.

وبناءً على هذه النّتائج، قدّمت الدّراسة مضامين تعليميّة، وتوصيات للتّربويّين، وصنّاع القرار وبرامج تدريب المعلّمين. وإضافة إلى ذلك، ولمّا كانت هذه الدّراسة محدودة ببعض المحددات البحثية، فقد قدّمت توصيات لمزيد من البحوث لتضمين عوامل مختلفة من أجل تحقيق نتائج أفضل لدراسات منبثقة عن هذه الدراسة.

## DEDICATION

I dedicate this work

To my mother who passed away during the research phase may Allah bless her soul.

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# Chapter One

## Introduction

“A society which is mobile, which is full of channels for the distribution of a change occurring anywhere, must see to it that its members are educated to personal initiative and adaptability.”

John Dewey (1916)

Integrating technology into teaching and learning seeks to empower education through the features that technology has to morph itself as indispensable to the ubiquity of learning. The emergence of mobile learning (M-learning) as "a paradigm shift from d-learning (distance) and e-learning" (Guy 2009, p. ix) has revolutionized the way knowledge can be accessed and certainly when knowledge and learning can take place. As this generation is the so-called millennial or digital natives (Krotov 2015; Prensky 2011), an up to date method of instruction should be developed to match their cognitive as well as their meta-cognitive styles of learning (Kasiyah et al. 2014). To this aim, working towards life-long learning in a ubiquitous social constructivist frame necessitates an implementation of technology in which the teachers, the learners and the context of learning are integrated to form a learning environment that constitutes a feasible context for learning these days. As for the teachers, handheld devices, the iPad in particular, support them in their instructional plan. As indicated by Weinberger (2011) for teachers to implement their instructional plans, they need first to individualize them. Technology is developed to be the convenient vehicle that could carry and embody these plans. The idea of integrating technology, as pervasive learning to develop teachers’ performance, into their instructional plans, leads to the invention of TeacherMate (Weinberger 2011) which is a system to assist teachers in individualising their instructions effectively.

As a second domain based on the social constructivist frame for evaluating M-learning (Koole 2009), students need not only to develop surface strategies to maintain their learning as a pervasive or life-long learning, but they also need to develop built-in strategies that encompass their different levels of understanding. These strategies necessitate a deep-in learning in which students seek to develop, understanding, engage with and operate in as well as evaluate the content they learned. As suggested by Biggs 1999, good teaching can result in taking deep or built-in strategies from the students' side, while poor teaching in the widest sense could influence students' mindsets to consider only the surface strategies. When learners perceived learning as a heavy load process, they usually opt to choose surface strategies to cope with this process. The use of M-learning is pervasively expanding the time and the place for learning to take place thus enabling learners to opt for deep instead of surface strategies.

For these strategies to be developed, whether they are surface or deep ones, there need to be a context for that learning as well as a social interaction mode. Learning context as defined within an M-learning frame is the relevant circumstances in a learning event (Figueiredo & Afonso 2005). The philosophical worldview of learning context will be explained further in this thesis; however, the multiplicity of its manifestations is not being focused on but rather the wholeness of context. In the same vein, recent studies (e.g. Almeeza 2013; Alqarawi 2013; Buragga et al. 2013; Gitsaki et al. 2013; Ismail, Almekhlafi and Almekhlafi 2010) which investigate different teaching strategies within the M-learning domain consider context as the interaction between the learner and his/her learning environment. This integration, of course, includes the device (iPad), the internal environment i.e. classrooms, teachers, content and the external or the extended environment which includes the social factor. Discussing the social context and its dimensions in M-learning implementation, Krotov in his recent study (2015) asserts the importance of this context. He further explains that considering the technology as the center of the definition of M-

learning deprives it of the meaning of interaction. After highlighting different definitions for M-learning he concludes by stating the comprehensiveness of Koole's social constructivist definition. He states that M-learning could not be acceptable unless it is understood as the "mode of learning in which learners may move within different physical and virtual locations and thereby participate and interact with other people, information, or systems—anywhere, anytime" (Koole, 2009, p. 26).

More effectively, scholars indicate that E-learning and M-learning have reduced the distance between learners and teachers and make learning experiences more collaborative, personalised, continuously accessible and richly contextualized (e.g. Ayala & Castillo, 2008; Barreto 2003; Hui, et al. 2005; Martín-Blas & Serrano-Fernández 2009). The context of teaching and learning has been changed through the mobility of the teaching tools. The convergence of mobile devices and handheld technologies into ubiquitous technologies has ignited a paradigm shift from e-learning to M-learning to provide "anytime", "anywhere" learning and teaching (Luis de Marcos et al. 2006, p.1). After a thorough review of the relevant literature, Goundar (2011) asserts that the feasible use of technology in teaching and learning and its ubiquity is attributed to "the intimacy and immediacy of the personal screen and the ease of use and intuitive design of modern touch screen operating systems" (2011, P.15).

The integration of mobile devices and handheld technologies in teaching and learning has become one of the main trends in present day education. The widespread availability of such handheld devices, iPad in particular, has attracted their advocates (e.g. Almeeza 2013; Alqarawi 2013; Buragga et al. 2013; Gitsaki et al. 2013; Ismail, Almekhlafi and Almekhlafi 2010) to explain these devices' feasibility in education. On the other hand, they turn a blind eye to their deficiencies in gaining students' attention and retention as well. Although it is evident that there

is a growing interest in the use of the iPad in education, there are some concerns about institutions "jumping onto the iPad bandwagon" (Kobie 2011) without an in-depth investigation into the effectiveness and the applicability as well as the practicality of implementing such a device. Despite the consequences of many luminescent anecdotes about using mobile devices in education, they are after all ICT devices which consist of fragile electronic components, need connectivity for access and power to operate. Therefore, deploying these devices in education is entirely dependent upon network connectivity, electrical power and user competency (Goundar 2011). To understand the effects of M-learning devices on learners of different ages, a recent study conducted by a group of pediatricians, Radesky et al. (2015) conclude that the use of the iPad can help toddlers and preschoolers if it is used for educational purposes like recognizing the alphabet, the colors or numbers. However, it may be more damaging to the development of children specifically their social-emotional life as well as their self-regulation if it is used as "mundane" an everyday object (p.12).

With these concerns in mind, this study aims to investigate and evaluate the iPad application in Secondary Technical Schools (STS) in the UAE and its role in developing teaching listening and speaking skills. These two skills were rarely given sufficient opportunity to be appropriately practiced inside the classroom. Most of the instructional time is either limited to ask and answer interaction mode or largely allotted to reading and writing skills. Therefore, the use of M-learning devices is studied to see if it might help to expand the instructional time giving more time for learners to practice more English while being away from the classroom setting (anytime anywhere learning). It has eloquently been confirmed that "even though countless teachers intuitively teach in more dynamic, interactive, student- centered ways, the acquisition model of teaching and learning, for a complex range of reasons, has continued to prevail in face-to-face classrooms in educational institutions throughout the world" (Senior 2010, p.138). The main

reason for this model continuing in the ascendancy is not attributed to "hardware / software shortcomings". Yet according to (Godwin-Jones 2011), it is referred to as a real lack of "conceptualization of how language learning could be enhanced in new, innovative ways with the assistance of mobile devices"(p.7). Thus, evaluating how mobile devices are used in developing learners' oral and listening skills along with reconceptualization of teaching and learning with the use of these devices might result in better integration and feasible implementation of these devices in teaching and learning strategies.

Conceptualizing teaching and learning oral and listening skills as denoted by Pritchard (2013) is the "individual process of constructing understanding based on experience from a wide range of sources" (p. 1). As for learners to construct understanding based on their different sources, they need a dynamic atmosphere of interaction. Interaction is the only condition for explaining learning that has been acknowledged by all researchers. Illeris (2008) cited in Aljuaid (2014) concludes that all the previous studies acknowledge interaction without exception with "the existence of two processes: the external interaction process between learners and their social, cultural, and material environments, and the internal psychological process of elaboration and knowledge acquisition" (p.476). All these kinds of interactions are sufficiently provided in the utilization of the iPad in the teaching and learning of oral and listening skills. They (the different kinds of interactions) are contained in the applied model which is Kool's (2009) social constructivist model the FRAME.

### 1.1. Context of the Study

Secondary Technical Schools henceforth (STS) have been established in 2010 / 2011 aiming at providing the Emirati youth with the necessary competencies to obtain employability skills that help build a technical and technological platform for the future of the country. They also aim at

developing the vocational education as a demanding education deemed to supply local industry in the UAE with the needed manpower (STS 2012). Currently, there are STS campuses across the UAE. At the initial stages it was exclusively for males. Afterwards, female students were included to form a composition of eleven campuses five of which are girls. They begin at grade 10 and then continue with grades 11 and 12. The English curriculum is adopted from Cambridge University ESOL that has been tailored to suit the level and the skills of the STS students with its role as an international standardized program. The English curriculum is divided into three phases namely: Objective KET alongside KET test, Business Benchmarks BEC Preliminary for Business English along with Preliminary English Test (PET) and intermediate objective IELTS as an exit point for grade 12 students with 5 band score which are designed in accord with the three grades of 10, 11 and12 respectively. In their justification for the selection of this curriculum in particular, ADVETI senior management confirmed that KET and PET along with BEC are not only internationally accredited by industrial, service-based employers as well as administrations around the world as a qualification in Basic English, but they are also deemed to meet the needed skills and competencies of the learners (ADVETI 2013).

As far as technology integration is concerned, since they have been established in 2011, STS senior management decided to make use of technology in the field of vocational education. Therefore, in 2012, they decided to implement the initiative of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, in which they utilize the iPad as a mobile learning (M-learning) device in the teaching and learning process across the board of STS campuses. Therefore, ADVETI opted to integrate the iPad as a mobile device aiming to develop STS students' engagement and language proficiency. The reason for selecting the iPad rather than any other tablets is due to the compatibility of the device with the infrastructure of the institution (STS 2011). As a faculty

member in ADVETI, the researcher is well aware of the infrastructure and this stated compatibility.

### 1.2. Statement of the problem

Aiming to keep the country up to date in technology integration into education, His Highness Sheikh Mohammed Bin Rashid, UAE Prime Minister and Ruler of Dubai, ordained the introduction of the iPad in the UAE federal government universities and colleges on September 2012 (Gitsaki et al. 2013). As one of the educational institutions which are influenced by the decision, Abu Dhabi Vocational Education and Training Institute (ADVETI), decided to adopt the iPad for M-learning. In the same vein, students who join the Secondary Technical School, as one of ADVETI's educational institutions, should be acquainted with as well as able to apply this technology into their teaching and learning context. Integrating technology, M-learning in particular to develop ESL learners' oral competency is not thoroughly investigated neither internationally nor locally. Therefore, the problem investigated in this thesis is tripartite. Initially, for a three-year implemented program in the field of vocational education, the iPad needs to be investigated to evaluate the impacts of such a device on teaching oral and listening skills to the STS students. Vocational education per se is a new area that lacks research, so when it is decided to implement M-learning as a tool of instruction as well as learning context, there should be a thorough investigation into the effectiveness of this emerging field to evaluate the ways teachers make use of this technology and the learners readiness, acceptance, and strategies of application.

A great deal of research has investigated the different aspects of M-learning and specifically, the iPad applications, regionally (Almeeza 2013; Alqarawi 2013; Buragga et al. 2013; Gitsaki et al. 2013; Ismail, Almekhlafi and Almekhlafi 2010) and internationally (Blake 2013; Franklin and Peng 2008; Kalloo 2012; Li et al. 2010; Manuguerra and Petocs 2011), since its implementation

as an accessible device in the domain of education. Nevertheless, no research has investigated the impacts of the iPad on teaching oral and listening skills. Most of the previous studies tackled this issue only to reveal the participant attitudes and perceptions. Therefore, this thesis investigates and evaluates the iPad application, its implementation strategies and to what extent it is utilised to achieve effective oral and listening skills enhancement.

As a third concern, from the researcher's observation as a member of the teaching staff in the institution, some problems in implementing iPad are encountered due to the inexperienced practices of the teaching staff; the indefiniteness of the instructional plan and the strategies of implementation specifically when it comes to teach oral and listening skills. Aligning the instructional plan with the strategies of iPad implementation in actual use is a pivotal concern for an M-learning environment. To elaborate, teachers who are to integrate the iPad in their teaching and learning strategies or in their instructional plan should be acquainted with the way this M-learning device is used. Moreover, some of the teaching staff, particularly the newly contracted teachers are not well trained for iPad implementation. Evaluating to what extent M-learning helps in developing learners' oral and listening skills specifically within vocational education will be highly beneficial if the institution plans to make use of the full potential of the iPad in developing the students' oral and listening skills. This consequently leads to an improvement in students' linguistic performance and their employability skills as well.

### 1.3. Significance of the Study

Evaluating iPad application as an M-learning device in enhancing students' oral and listening skills in Secondary Technical Schools is a pivotal issue for three reasons. First, it will give insight into the role of M-learning, specifically the iPad, in enhancing instructions and language attainment. Explaining whether the iPad as an M-learning device is effective or ineffective in

enhancing students' oral and listening skills will help the decision makers in the vocational education sector to make clear instructional plans regarding the implementation of these devices. Secondly, reviewing the relevant literature conspicuously demonstrates that M-learning has not been investigated in the domain of vocational education in any Arab country. It also reveals that most of the conducted studies e.g. Almeeza 2013; Alqarawi 2013; Buragga et al. 2013; Blake 2013; Franklin and Peng 2008; Gitsaki et al. 2013; Ismail, Almekhlafi and Almekhlafi 2010; Kalloo 2012; Li et al. 2010; Manuguerra and Petocs 2011 are for how learners perceive M-learning, what their attitudes towards M-learning are and how it develops cognitive and meta-cognitive processes but of course not in the domain of vocational education. Also, evaluating M-learning in enhancing ESL learners' oral and listening skills will enrich the body of both national and international literature by bridging the gaps on how to approach M-learning in vocational education. Al Suwaidi (2014) was the only study that has been conducted recently in the context of STS that aims at evaluating the effects of the iPads on the learners' performance considering this mobile device as part of the different pedagogical approaches.

A considerable amount of literature investigates M-learning aiming at understanding the developers as well as the users' satisfaction, attitudes, and perception. However, either they do not follow up the quantitative findings with insightful qualitative ones, or the investigated M-learning device is not the iPad. Lastly, the thesis will provide a portrayal image of the strategies of teaching and learning in the digital age (Rosenberg 2001). More importantly, the significance of this study lies in how teachers and students develop strategies for enhancing oral and listening skills through using an M-learning device (iPad). According to Prensky (2001), the ways and the strategies that students used to learn with are no longer the same. He further asserts that the 'singularity' of the digital age, those who live their entire life surrounded by technology, has

incrementally changed. Therefore, the thesis investigates how to develop different strategies for teaching and instructing these students.

More significantly, the use of Kool's (2009) Model the FRAME to evaluate the effectiveness of mobile devices in education though not new in education, (it has been around for a decade), yet it has never been used to evaluate these devices in vocational education. The specificity of vocational education, particularly in the Arabic context, is that the learners need to develop their employability skills along with their language competence. To elaborate, they need to extend their learning context outside the normal learning environment. On the other hand, they need to have a virtual practice once they are exposed to the theoretical part. Thus, there needs to be a model that has all the qualities to help in evaluating the use of M-learning in vocational education. This has been confirmed by the developer and the users of the model. Koole and Ally (2006) assert that the FRAME Model will be the "first comprehensive theoretical model to describe mobile learning as a process resulting from the convergence of mobile technologies, human learning capacities, and social interaction" (p. 2).

From a theoretical framework perspective, the use of the three theories: Connectivism Theory (Siemens, 2004), Activity Theory (Engestrom 1987) and Conversation Theory (Pask 1975) under the social constructivist umbrella adds another significance to this thesis. As far as a theoretical framework concerned, merging these theories in one theoretical foundation to underpin the current thesis substantiates the development of oral and listening skills when M-learning is used for that purpose. The reciprocity of these theories will be explained further in the literature review in this thesis.

From a different perspective, the multiplicity of research methods for gaining the valid data to decide on the effectiveness of M-learning on developing learners' oral and listening skills,

constitutes an added significance for this thesis. To put it differently, the procedures by which the Focus Groups have been conducted are a plus for this thesis as they are not only a discussion of the perceptions of the participants in the issue under investigation, but they are also a demonstration of the participants' practical expertise in the field. This practicum adds to the study the value of focus group practicalities which helps in expanding the use of the focus group as a research method.

### 1.4. Research Objective and Research Questions

Since the iPad is newly introduced into the STS educational system in the UAE as an M-learning device, it is of paramount importance for it to be evaluated to ascertain its role. For any undertaken research, there should be research objectives to be achieved and research questions to guide the study. Fraenkel, Wallen & Hyun (2012) assert that for research questions to be researchable, they should be feasible, clear, significant and ethical. The proposed thesis seeks to achieve the following research objective:

To investigate the role of iPad as an M-Learning device based on Koole's M-learning Frame Model in teaching English speaking and listening skills to STS students.

As iPads have been chosen to be part of the teaching and learning processes, and like any other newly introduced teaching strategy, they need to be evaluated to either prove their role in teaching speaking and listening skills as M-learning devices or to avoid adding more distractions to the learners in the 21$^{st}$-century teaching environment (Matthew 2012). The excessive use of such devices with the predominant notion about the inclined role of the iPads in the field of education necessitates deciding on a measure of the actual effectiveness of these devices. Thus, the researcher formulates the aforementioned research objective to bring about iPad implementation and investigate their effectiveness in teaching or enabling learners to attain best

practices or strategies deemed to be ubiquitous and life-long learning strategies. The reason for choosing the two skills of listening and speaking as is previously indicated is that they have received less attention by teachers and are totally ignored in formal assessment (MOE 2015).Notwithstanding this, they feature more in daily communication than reading and writing. Therefore, as the product of the STS schools is the workforce that needs to survive the multilingualism, these two skills are the focus of this thesis. As KHDA 2015 asserted, vocational graduates should have the required employability skills that put them in demand in the job market. Furthermore, Kool's (2009) Framework for M-learning Evaluation is selected to be the platform by which the M-learning is evaluated. The rationale for the selection of this Model is further explained in the theoretical framework section.

To achieve the objective mentioned above, a thorough breakdown of the items given in the previous objective should be articulated as questions that can be researched and answered. Therefore, the perceptions of STS students about their readiness to use iPads in learning speaking and listening skills should be investigated regarding research questions. Strategies that are either followed by teachers or exhibited by learners are another investigative concern. Thus, the perceptions of the STS stakeholders on the usability of the iPad as an M-learning device; the strategies that were experienced by teachers and the ways the iPads were used by students are part of the research purpose. To achieve these purposes, the following questions are put in place:

1.What are the STS students' perceptions on their readiness to implement the iPad as an M-learning device in their learning process?

2.What are the STS stakeholders' perceptions on iPads suitability as M-learning devices for teaching English in STS schools in UAE?

3.What iPad strategies do students employ to develop their oral and listening skills?

4.What iPad teaching practices do teachers use to develop STS students' oral and listening skills?

As this is a mixed methods approach, the articulation of the first research question calls for a quantitative research method. Thus, a questionnaire was designed to measure the readiness of the students for implementing iPads in their learning environment. The second research question is addressed using semi-structured interviews with teachers and two sessions of focus groups discussion. As for the third and the fourth research questions, semi-structured interviews, focus groups discussions and participant observation are utilised to reach valid and reliable answers for them. Strategies and teaching practices are astounding indicators for the effectiveness of the iPad implementation. If all these questions are adequately answered, the role of iPads implementation on teaching the STS students' oral and listening skills will be consequently demonstrated.

### 1.5. Overview of the Study

As this study attempts to investigate the role of the iPad as an M-learning device in teaching STS students' oral and listening skills, it follows the following structure. Chapter two, the literature review, highlights the theoretical framework in which the three theories underpinning the research are explicated and thoroughly explained showing their relation to M-learning, how they can be interrelated to feed into the social constructivist theory and the way they are used to inform the FRAME model's feasibility in evaluating M-learning in developing ESL learners' oral and listening skills. The interrelation of Connectivisim Theory, Activity Theory and Conversation Theory is posited in this thesis on the basis of a social constructivist frame. In the same vein, the chapter explains the main theories that have been used to evaluate M-learning in the literature as well as the other models for evaluating and implementing mobile device learning. The previous studies which tackled M-leaning and teaching and learning oral skills in particular are revealed in the same chapter. In chapter three, the theoretical approaches on which

the research methodologies are introduced, and the choice of the research methods is explained together with the rationale for the selection of the used methods. Research instruments, data gathering techniques and sampling strategies along with the procedures and site description are explained in the same chapter. The findings which are gained from the gathered data are illustrated and demonstrated in accord with every research question and are separately highlighted in chapter four. Finally, discussion of the findings based on the relevant literature, the limitations, and the recommendations are demonstrated in chapter five. Research ethics and recommendation for future research are presented in the same chapter while the last chapter concludes the study with the pedagogical implications along with an overview of the whole thesis.

# Chapter Two

## Literature Review

"If I have seen a little further it's because I stand on the shoulders of giants" Isaac Newton.

### 2.1. Introduction

It has been asserted that mobile devices learning (M-learning) is a demanding research area starting from the nineties of the last century, yet it is the leading area as far as the integration of technology into education is concerned. The paradigm shift from traditional learning to e-learning and then to M-learning necessitates a thorough investigation into and exploration of the different ways that technology can be incorporated into teaching and learning. One of the recently used M-learning devices is the iPad. Before going on to investigate the phenomenon of iPads implementation in teaching and learning, specifically in the teaching of the language skills (oral and listening), it is appropriate to introduce different definitions of M-learning. Since it is inherently a mobile device, the iPad imposes various interpretations of M-learning. Therefore, a thorough discussion of the state of defining M-learning and from which angle it has been defined is required before reviewing the related literature. The multifariousness of the interpretations on how to define M-learning is an offshoot of the two fields of electronic learning (e-learning) and distance learning (d-learning). According to Brown (2005) and Keegan (2005), these are the two lenses through which researchers and practitioners define m-learning. For example, Traxler (2005) and Park et al. (2011) take technology as central to the definition of M- learning. From a different perspective, mobile aspects were focused on, allowing for learning to occur at any time any place (Keegan 2005; O'Malley et al. 2003; Peters 2007; Valk et al. 2010). Other researchers take this concept further to include the learning everywhere (U-learning) (Park et al., 2011; Pea & Maldonado 2006). According to Quinn (2000), M-learning is defined as "e-learning through

mobile computational devices" (p.34). Other scholars explain iPads as mobile devices with a broader understanding that is not confined to the mobility of the device but transcends beyond to the social, conceptual learning in which the learners assume their autonomy for learning (Sharples et al. 2007). Another broader definition for M-learning based on iPads is that "in M-learning contexts learners are trusted with great autonomy and that they are in charge of their own learning" (Han & Li 2010, p.201). They further assert that "[t]he success of M-learning lies in an individual's subjective willingness and cognitive engagement in M-learning activities" (p.201). Thus, certain boundaries need to be set to understand the exact meaning of technology integration in the field of education in general and vocational education in particular. Some of these boundaries are related to ubiquity, interactions and social context as far as social constructivism is concerned.

Apart from the operationalized definition of M-learning, a theoretical framework is needed to study the effectiveness of iPad implementation on teaching oral and listening skills, particularly in vocational education. A theoretical framework that combines the predetermined boundaries of defining M-learning is crucial at this stage of the thesis research. This theoretical framework shall embrace the theories that underly the whole thesis based on which methodologies have been selected; the analysis which was conducted and the conclusions reached. Selecting a model that fits into the theoretical framework necessitates a thorough appraisal of the different models to decide on the most suitable. The relationship between the models and the frameworks of m-learning is clearly described by Hsu and Ching (2015) "frameworks delineate the conceptual relationships among components and hypotheses grounded in related theories, while models provide a descriptive or prescriptive representation of relationships among components in a framework based on analysis of empirical evidence"(p.2). Thus, in this chapter the theories that

underpin the thesis as well as the models that analyse M-learning are introduced. The rationale for the model selection is also introduced.

In the vein of ELT, M-learning researchers noticed that "thus far M-learning has not yet had great impacts on education context and the studies that address the adoption of mobile information and communication technologies in school settings are still lacking" (Han & Li 2010, p. 213). In consequence, the application of iPads in STS school ESL programs is in need of research to ascertain the effectiveness of this program or to evaluate its implementation. It is argued that "in the context of mobile learning evaluation, the effort should also be to see beyond the 'wow' factor associated with the technology; into how effective the technology is in engaging the learner over the long term" (Sharples et al. 2007, p. 242). For the abovementioned reasons, the researcher reviews in this chapter the related literature concerning the theoretical frameworks, the models for M-learning in education as well as the theories that underpin M-learning. The M-learning in the context of English language teaching will be explained specifically in relation to the teaching of the oral and listening skills. The strategies of teaching, as well as the practices that have been utilized while technology is integrated into language teaching, are investigated in the previous literature, so this chapter will shed light on the different kinds of strategies whether they are surface or deep. Vocational education is a new domain in the UAE education system with another body of literature that needs to be present and elaborated on in this chapter to explain and validate the reasons for conducting this thesis. Finally, the empirical literature of M-learning is reviewed to show the findings of the previous studies and projects that have been conducted nationally, regionally and internationally.

## 2.2. Theoretical Framework

Social constructivism features strongly in Vygotsky's philosophy of sociology and learning. He contends that "learning is not development; however, properly organized learning results in mental development and sets in motion a variety of developmental processes that would be impossible apart from learning" (Vygotsky 1978, p. 90). When students use iPads to construct their own learning, they move from social to individual (Piagetian direction) and from individual to social (Vygotskian direction) cognitive development (Vadeboncoeur 1997). In this context, social constructivists assert the role of the individual in constructing his/her knowledge as a student-centred environment, but still they do not ignore the formal knowledge as it was understood by the signs and the symbols, which enter the learning situation "as tools within the social interaction, and affects development or learning through activity engaged in by the student" (Richardson 1997, p. 8). Moreover, one of the fundamental notions of social constructivism is the selection of authentic tasks (Brown, et al. 1989; Jaworski 1994; Woo and Reeves 2007) in which meaningful learning occurs based on real world related authentic tasks and through the interaction and collaboration between facilitators (teachers) and peers.

The social constructivist (Vygotsky 1978; Browne & Campione 1996) theoretical framework which underlies/underpins the thesis houses the three theories of Connectivism Theory (Siemens, 2004), Activity Theory (Engestrom 1987) and Conversation Theory (Pask1975).This combination is explained as these theories all stem from the principles of social constructivism theory. Mattar (2010), in his review of the theories of learning in the digital age, states that Connectivism Theory can be positioned as the development of social constructivism in the current premises of technology integration in education though it is not considered as a learning theory by other scholars e.g. (Kerr 2007; Kop & Hill 2008). Kanuka and Anderson (1999) in the other hand, assert that Connectivisim Theory is a development of the social constructivist theory

in their view of learning as a process mediated by technology. Furthermore, In a thorough development of the Connectivism Theory from the principles of Social Constructivism, referring to the works of Duffy and Cunningham (1996) and Wilson (1996), Del Moral, et al (2013) confirm that "connectivism reformulates constructivism principles at the level of networks and connections"(p.107). According to their reformulation, learning is developed from being personal experiences, learner-centered knowledge constructed into spontaneous and uncontrolled connections that might take place in an uncertain environment which heavily depends on networks information recognition patterns (Duffy & Jonassen1992; Stephenson1998). In this sense, learners have absolute control over the learning process rather than being engaged in it. Thus, Connectivism Theory aims at the "amplification of learning, knowledge and understanding through the extension of a personal network" (Siemens 2004, p.12). Based on this interrelation between the two theories of Social Constructivism and Connectivisim, learners in STS schools while using M-learning devices (iPads), should be provided with a constructivist environment not only to engage them in this environment but also to have full control over their learning ubiquitously (anytime, anywhere).

As for Activity Theory, it is chosen as it supports the idea that "learners produce cognitive tools through social interactions resulting from the cultural environment produced by an activity system" (Jonassen 2000, p.35). It has been asserted that Activity Theory is used as a framework to reflect on the human practices and interaction with their environment within a certain context (Zurita & Nussbaum 2007). As far as technology integration is concerned, Activity Theory comes as a unit to analyze human interactions taking their activities as the unit of analysis. In this thesis, the researcher uses Activity Theory in its related concepts with human-computer interaction without deep analysis of its philosophical intents or its epistemological stance of knowledge interpretation. Fundamentally speaking, Activity Theory is composed of subject,

object, actions, and operations (Leont'ev 1974). These are, basically, the aspects that are in accord with the chosen model (Koole 2009) to conduct this thesis study. In her explanation of the Activity Theory, Nardi (1996) introduces the main concepts of this theory as a goal-directed action to accomplish an object which can be attained by more than one action. To operationalize the application of Activity Theory in M-learning Figure1below illustrates the way how this theory acts as a framework for analysis once applied in an M-learning environment.

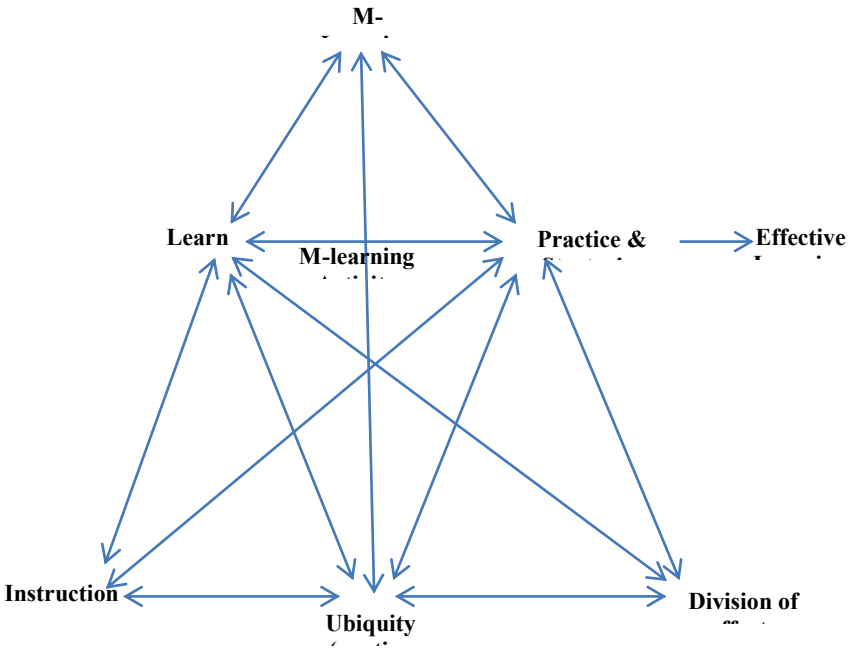


**Figure 1: Activity Theory Application in M-learning**

The figure above conspicuously demonstrates the application of Activity Theory in M-learning domain. The instrument is the M-learning device; the subjects are the learners and the objects are the strategies and the practices whether students' or teachers'. Down the triangle, the three aspects are rules which are here the instructions, the community which is the anytime anywhere learning environment considered as the actual community in m-learning. Finally, the efforts that are exerted from the learners within the given time by using the different strategies and practices will definitely lead to the expected outcome which here is the effective learning.

Although it has been asserted that “Conversation Theory explicitly propounds a radical constructivist epistemology” (Scott 2001, p.343), it is strongly related to social constructivist views of coming to know. Once it is used as a conversational model rather than a theory, it places the Piagetian radical constructivist of processes in an explicit social context. The rationale for including Pask’s Conversation Theory in the theoretical framework of this thesis is that one of the fundamentals of this theory is to explain the relationship between the speakers and the listeners and how they construct their meaning based on their interaction and based on their past experiences in a social context. As this theory stems from the constructivist views of knowledge and meaning-making, it potentiates the processes of interaction between the speaker and the listener while conversing to make meaning. Von Glasersfeld (1991, p. xiv) explains that:

> Language frequently creates the illusion that ideas, concepts and even whole chunks of knowledge are transported from a speaker to a listener. This illusion is extraordinarily powerful because it springs from the belief that the meaning of words and phrases is fixed somewhere outside the users of the language. Perhaps the best way to dismantle the illusion is to remember or reconstruct how one came to form the meanings of words and phrases when one was acquiring language in the first place. Clearly it could only be done by associating bits of language one heard with chunks of one’s experience – and no one’s experience is ever exactly the same as another person’s. Thus, whatever another says or writes, you cannot but put your own subjective meanings into the words and phrases you hear.

Combining this meaning with the way that Activity Theory presents the activity, as a unit of analysis of human-computer interactions, along with the extension of the personal networks creates a rich context to study the iPad effectiveness in teaching oral and listening skills. Moreover, as for the Conversation Theory, (Pask 1975 cited in Kearsley 2000), it elaborates the idea of 'teachback' i.e. sequential learning process which categorises the learning process into serialists who developed through "entailment structure" and "holists who look for higher order relations" (p.6). It can be concluded that these ideas are nested in the social constructivist

epistemology since they signify that learning and knowledge are socially constructed realities, which is in line with the purpose of the thesis which is evaluation of the effectiveness of iPad in developing vocational learners' oral and listening skills.

More importantly, these theories give a room for classroom interaction, interactional feedback and motivation while being implemented using the iPad. The use of technology in the classroom has been studied and debated for many years. Although many educators and parents are afraid that the M-learning devices that are being used in the classroom currently may cause a "digital distraction" (Richtel 2010, p.23) which probably leads to a generation of learners who have trouble focusing on task, the introduction of new classes of devices that use a touch screen interface and the ubiquity of mobile devices such as smart phones and portable gaming platforms, Facebook, Twitter and other social networking media have changed the nature of the debate. Thus, it is worth studying the role of the iPads within these theories as all of these theories i.e. Connectivism Theory (Siemens, 2004), Activity Theory (Engestrom 1987) Conversation Theory (Pask1975) support the aforementioned classroom interaction interactional feedback and motivation. Moreover, collaboration and interaction between students should be easier with an iPad than a bulkier laptop or even a Smartphone, where the small screen size can make sharing and group work difficult. Anecdotal evidence from early adopters suggests that the iPad's shape and portability makes it feel more natural to pass around a group, and several of these devices could be used comfortably by groups of students working at tables.

Shuler (2009a, 2009b) suggests that mobile devices have significant potential to be a key ally in supporting learning experiences. They suggest that even with preschool children, apps are unquestionably a new medium for providing educational content, both in terms of their availability and popularity. She suggests that the academic community should pay attention to

Apps as an important potential factor in children's mobile learning. Shuler encourages researchers to investigate the implications of the current environment, and recognize "what works" in educating students. Banister (2010) suggests that teachers are needed to take up the challenge of integrating these devices in their classrooms and researchers are needed to document the impact. Little is known about how touch screen devices work in educational settings because at the writing of this study, products such as the iPad have been available for less than a year. By the time this study is conducted, new versions of the hardware and software will have been released making, perhaps, many of the findings already outdated. However while the revolution of the touch screen interface will likely be around in education is some form, for some time, currently there is little if any research on the use of these devices in classrooms. There are some studies on the use of Smartphone in classrooms and some preliminary articles on pilot projects using iPads.

The integration of the iPads in teaching and learning has the potential to be an aid for immediate and ubiquitous interactional feedback. Considering the features and the ease of use of the iPad in the classroom interaction, they give a significant space for extending the feedback whether they are student-teacher, teacher-student or student-student interactional feedback. Outside the classroom, the iPad’s portability should make it ideal for use in fieldwork, for transporting documents and e-books, and for recording real-time observations or accessing references on the fly (Johnson et al., 2010). In this respect, the iPad shares many of the affordances offered by smart phones, tablets and laptops, but with the level of interactivity available in such a portable device being its main point of difference. For the first time, there is a functional mobile device in which the readable touch screen frees a learner from the constraints of a keyboard (Vollmer, 2010; Wembler, 2010), removes the interface of a mouse, takes away the size constraints of smart phones, and removes the weight issues of laptops and tablets. In other words, the iPad

offers all the aforementioned portability of mobile devices, but with the increased power of a computer.

The construction and use of different remote environments requires skills and knowledge of the pedagogical and technical affordances of the iPad (Laurillard, 2007), including the way it connects with other devices and how this connectivity can be translated into high-quality, collaborative learning opportunities. However, mobile devices are not commonly associated with more sustained, deep and formalised learning experiences; instead, device interfaces are designed to be "intuitive enough for high-speed, short-term interaction" (Hummel & Hlavacs cited in Peng et al., 2009, p.174). Therefore, it is not yet known how easily more sustained and deeper interaction will be possible on an iPad, although its size might be more conducive to this than a cellphone. Another complication is the shift in paradigms for teachers, from the seemingly stable environment of the classroom or lecture hall, to more fluid environments in which the challenge is to create enough stability to allow learning to be guided (Sharples, 2007). What is seen to be of value educationally may shift too, from the show-and-tell exchange to, potentially, the "systematic capture [of] experience of learning outside the classroom, through images, notes and audio recordings" (Sharples, 2007, p.8). Additionally, learners may increasingly prefer to learn in unconventional ways where traditional assessment methods may not necessarily apply, or be suited. Taylor (2006, cited in Sharples, 2007) observes that in these situations the context of learning can vary greatly, because the mobile environment is eminently suited to supporting learning outside the context of curricula, institutions and timetables. Our potential subjects of study may be wandering around studying things that interest them, at times that suit themselves, with little or no concern for consistency (p. 9)

Having articulated how the learning theories explain how individuals acquire, organize and deploy skills and knowledge, here, the various models developed by researchers over time will be explained to understand how students learn.

### 2.3. IPads and M-Learning Models

The conceptual framework/model that is used in M-learning will be explained here. This section will list the aspects on which a learning model should be developed. Such aspects are the learning environment (an environment that facilitates learning), the learning processes (the activities which are a part of learning and refining skills and knowledge) and the learning outcomes (to achieve the refinement of skills and knowledge).

Controversial views regarding the use of M-learning and iPads have been examined when they are used to teach English as a foreign language (e.g. Bennett 2011; Brindley, Walti and Blaschke 2009; Gong and Wallace 2012; Shyamlee and Phil 2012). However, they have not been evaluated on how they have been utilised to provide students and teachers with learning or teaching materials. To determine the effectiveness of these devices (iPads), a model should be either developed or implemented. Scholars have developed different models for implementing m-learning in teaching and learning (Barker, et al 2005; Chen & Hsu 2008; Kearney, et al 2012; Koole 2009; Laurillard 2002; Leung & Chan 2003; Mostakhdemin-Hosseini & Mustajärvi 2003; Park 2011;Sharples, et al 2005; Shih & Mills 2007).

In this thesis, different M-learning models will be explained to examine their feasibility, comprehensiveness and applicability in developing teaching and learning. The criteria for evaluating these models will be based on their aptness for social constructivist perspectives of teaching and learning, their inclusiveness of the three aspects of M-learning which are the device, the learner and the teacher as well as the cross-transactional relations between them. The

rationale for the criteria selection is that the thesis is undertaken within a social constructivist theoretical framework. The deemed interactionist mode of M-learning should include the three abovementioned aspects and the model itself should be conducive to the learning environment.

The first model (Figure 2 below) is Laurillard (2002) "a conversational framework"(p.43). The conversational model for learning described here sets out to be a theoretically comprehensive framework for capturing what it takes to learn. This model captures the complete teaching-learning process. This model for learning is centered on the interactive dialogue between teacher and student that operates in two levels. The first level comprises the discursive, theoretical, conceptual level. The second level comprises the active, practical, experiential level. The two levels are connected by each participant engaging in the processes of adaptation, i.e., the adaptation of practice in relation to theory and reflection. In addition, the conversational framework describes the irreducible minimum for academic learning. The interplay between theory and practice, which makes the abstract concrete through a reflective practicum, is essential, as is the continually interactive dialogue between teacher and student. The transmission model is just one part of this more complex model for learning as shared understanding. It can be admitted that the conversational framework can be used to test how various applications of technology measure up to the requirements for a more progressive model (Ljubojevic & Laurillard, 2010).

The fundamental conception on which this model is built is "a continuing iterative dialogue between teacher and student, which reveals the participants' conceptions and the variations between them" (Laurillard 2002, p.71). Although this model is rooted in Pask's (1975) conversational theory in accounting for the aspects of interaction between learners and teachers, still it does not account for the concept of mobility 'ubiquity' in explaining the learning

environment. Significantly, this model stems from the principles of social constructivism. It provides a good opportunity for interacting by using technology (M-learning) not only to construct knowledge but also to enable students to build models for problem solving.

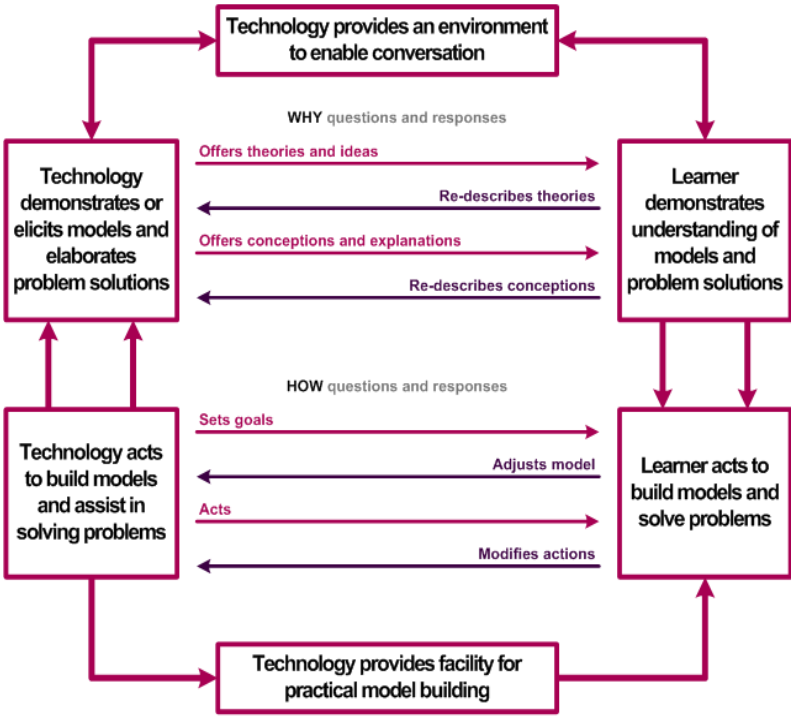


**Figure 2: Laurillard (2002) - A Conversational framework for the effective use of learning technologies**

The second model is the Pedagogical Framework for Mobile Learning Model that was introduced by Park (2011). This model explains four types of high transactional distance socialized M-learning, high transactional distance individualized M-learning, low transactional distance socialized M-learning, and low transactional distance individualized M-learning (Park, 2011).

The Transactional distance theory is defined by the fact that distance is considered not only as geographic separation, but also as a pedagogical concept. According to the theory, transactional distance is determined by three interrelated factors, namely the program's structure, the dialogue

that the teacher and learners exchange, and the learners' autonomy. The three relationships that further emerge are:

1. As structure increases, transactional distance increases.
2. As dialogue increases, transactional distance decreases.
3. As transactional distance increases, so does learner autonomy.

However, the transactional theory has been questioned by many, due to the unclear terminology and various other shortcomings. Later the introduction of the Activity theory, which differentiates among the "individual's (subject) actions on learning material (objects) mediated through artifacts, interacting with a community, moderated by a set of rules, and distributed by a division of labor" (Engeström, 1991), formed the basis for supporting the transactional distance theory.

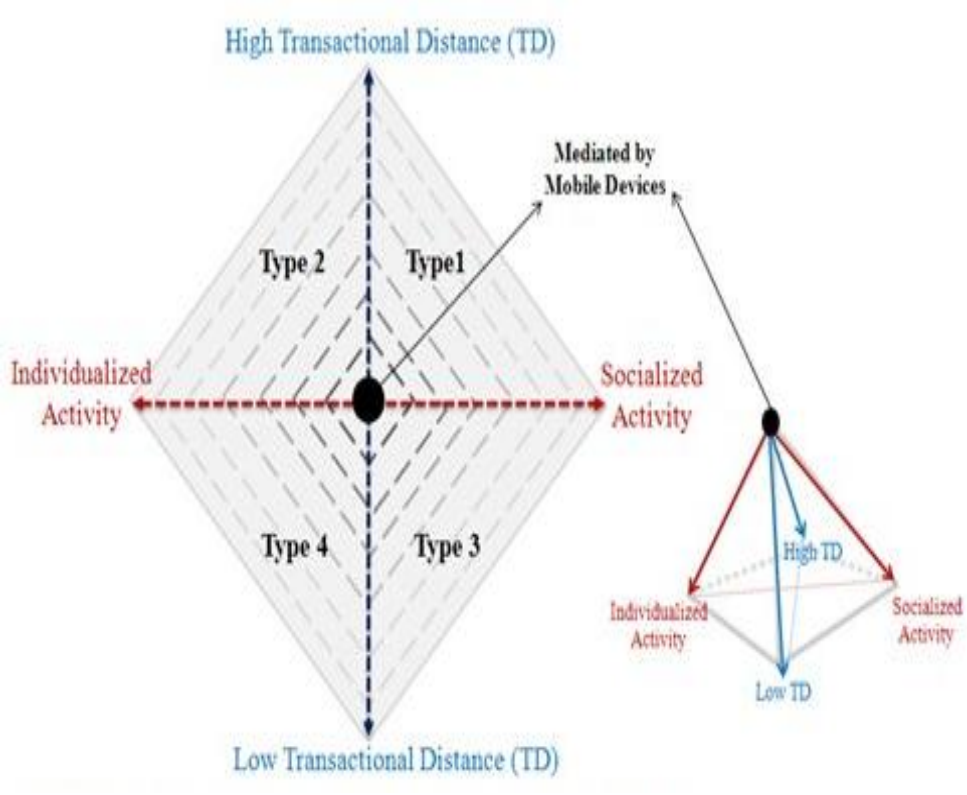


**Figure 3: Park (2011) - Pedagogical Framework for Mobile Learning**

From a different perspective, Park's (2011) "Pedagogical Framework for Mobile Learning" is more recent and less complicated models. In this model, the pedagogical combination between the social nature of the activity and the transactional distance shows the ways in which learners understand how M-learning works. To put it differently, the transactional distance is the 'cognitive space' between the students whereas the social nature of the activity is the extent to what the activity involves interaction to be completed successfully. By coding the activities and the interactional modes, Park expands the way of implementing M-learning and varies their context see figure 3 below. For instance, an HS approach allows for high transactional distance and high social interaction level with other students. This mode of interaction can be applicable at any level of education, but it might be more appropriate to learners with expertise in a given context. The LI interactional approach, conversely, could be closer to a traditional experience for students, who have highly-structured and mostly individual interaction with one teacher.

In spite of having the potential to be a suitable model for M-learning, as it has the social constructivist perspective for making interactions, whether individualized or socialized, more meaningful as well as accounting for the 'Activity Theory' as a primary theory in the thesis, Park's pedagogical framework is not the suitable model for the intended thesis. The rationale for not adopting this model is that despite its recency, the model does not explain the phase of interaction between the different aspects of M-learning e.g. learners, teachers and the mobile devices themselves.

There are other models that can be used for M-learning e.g. (Kearney, Schuck, Burden & Aubusson 2012; Leung and Chan 2003; Sharples, Taylor and Vavoula 2005). Based on the aforementioned criteria for selecting a model for M-learning, these models are not selected. The reason for not selecting these models is because they are not in accord with the theoretical

framework of the thesis. According to Ifinedo (2013), as for the first model Kearney, Schuck, Burden & Aubusson (2012),"M-learning is characterized within the concept of time and space using three constructs: personalization, authenticity and collaboration"(p.27). Since this model is inclusive to the two theories of motivation and socio-culture, it is excluded from being the appropriate model for this thesis, yet it can be a successful model for different studies.

As for the second model, Leung and Chan (2003), it addresses M-learning from the need of technological infrastructure with less focus on the interactionist mode between the different aspect of M-learning i.e. learner, teacher, context and device. Although this model explains some conceptualized interaction still it does not vividly incorporate the social factor in this interaction. Conversely, the third model Sharples, Taylor and Vavoula (2005) addresses the interaction with a more comprehensive way in which it includes the socio-cultural factor. However, based on only the Activity Theory, this model is not sought to be the suitable model for this thesis.

The model introduced by Koole (2009) emphasizes: social aspect, social technology, interaction learning, learner aspect, device usability and device aspect in mobile learning. Koole's (2009) Model for Framing Mobile Learning (FRAME) encompasses the whole framework for m-learning and is depicted in a three-circle Venn diagram (Figure 5) below. These circles represent the basic aspects as well as the extended interaction between them. The former is the interaction between the device, the learner and the context i.e. the social aspect. The latter, as shown in figure 5 below, is the device usability, social technology and interaction technology. The FRAME is arguably the most comprehensive model and most appropriate for M-learning for the following reasons: 1) it includes the significant factors of m-learning e.g. collaboration, contextualization and communication 2) it stems from the principles of the social constructivism philosophy 3) it is much simpler and more feasible/applicable than the other models.

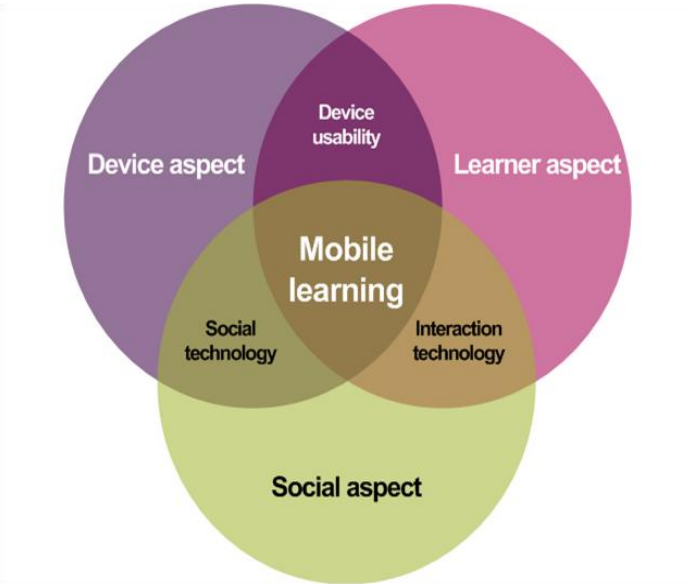


**Figure 4: Koole's (2009) - A Model for Framing Mobile Learning**

The Rational Analysis of Mobile Education (FRAME) model offers some insights into how a learner can take full advantage of the mobile experience, and how the practitioners can design materials and activities appropriate for mobile access. The model further addresses how mobile learning can be effectively implemented in both formal and informal learning. The FRAME model takes into consideration the technical characteristics of mobile devices as well as social and personal aspects of learning (Koole 2009).

The FRAME model highlights the role of technology beyond simply an artefact of "cultural-historic" development. In this model, the mobile device is an active component on an *equal footing* with learning and social processes (Koole 2009). This model also places more emphasis on constructivism. The FRAME model describes a mode of learning in which learners may move within different physical *and* virtual locations and thereby participate and interact with other people, information, or systems anywhere, anytime (Koole 2009).

From the perspective of the FRAME model, mobile learning experiences are viewed as existing within a context of information. The learner's interaction with information is mediated through

technology. Hence, it is such a complex interaction of the device, learner, and social aspects that makes information becomes meaningful and useful.

A plethora of research has applied Koole's the FRAME model (e.g. Ally et al 2009; Batista et al 2010; Crescente & Lee 2011; Hamdeh & Hamdan 2010; Kenny et al 2009; Koole 2006; Koole 2009a; Koole 2009b; Koole 2010; Koole et al 2010; Kumar et al 2011; Mishra 2009; Palmer & Dodson 2011; Pettersson et al 2010; Serrano-Santoyo & Organista-Sandoval 2010; Stockwell 2010; Whalley et al 2011). However, none of these studies has investigated the use of FRAME to evaluate the effectiveness of M-learning in the teaching and learning of oral and listening skills.

For example, Kenny et al. (2009) conduct a study to explore the effectiveness of integrating m-learning into a nursing program. They state that Koole's definition of "M-learning as a process resulting from the interaction of mobile technologies, human learning capacities, and the social aspects of learning" (p.76) is the most comprehensive and inclusive theoretical model for their study. In the same vein, Kumar et al (2010) conducted a 26-week study to investigate the effectiveness of M-learning for rural children. They implement Koole's FRAME for evaluating to what extent rural children can make use of M-learning accessibility. They revealed that mobile devices are a seamless means for making education accessible to rural children 'anytime anywhere' in a more convenient way than formal schooling. In short, this thesis will explain all the related studies that implement Koole's FRAME model for evaluating the effectiveness of M-learning in an educational context. Therefore, it is hoped to establish that the FRAME model is suitable to evaluate the effectiveness of iPad in developing ESL learners' oral and listening skills.

## 2.4. IPad and M-Learning Theories

An overview of the literature that substantiates the theories through which M-learning has been investigated and the literature which discusses its implementation is introduced here. It has been asserted that the "frameworks delineate the conceptual relationships among components and hypotheses grounded in related theories, while models provide descriptive or prescriptive representation of relationships among components in a framework based on analysis of empirical evidence"( Hsu & Ching 2015, p.2). Thus, in this section, the theories that underpin the thesis as well as the models that address m-learning are discussed and reasonable justifications are given for the selection of the model. The relationship between the theories and models used to investigate (the phenomena of) M-learning is elucidated, this section explores the numerous lists of theories that include: Constructivist Theory, Behaviourist Theory, Socio-cultural Theory of Learning, Lifelong Learning Theory, and Situated Learning Theory.

### 2.4.1. Constructivist Theory

Constructivist principles have stemmed from Piaget's approaches regarding how children learn. He places emphasis on the fact that children learn through their social environment and his cognitive theories regarding this were the basis for the formulation of discovery learning (Slavin 1988). In line with this, Vygotsky's developed theories that pertained to how children learn through play. From here, the notion of social constructivism evolved. According to Vygotsky's ideas, it is the ability of children to make discoveries in a learning environment that enhances their cognitive development (Wertsch and Tulviste 1992). Therefore, if the culture in which children grow enables them to learn from experience and make discoveries their learning will be enhanced. Today, this theory is widely applied in educational settings and it is argued that students, either adult or children, may be able to master concepts easily if these concepts were

developed and introduced in social constructivist mood. Therefore, if a child or an adult is allowed to experience and learn through the discovery of new ideas or facts their learning will be/is enhanced.

In constructivism, Vygotsky emphasizes the importance of the interaction with others, such as peers, teachers and parents, to build knowledge (Vygotsky, 1978). Vygotsky also emphasizes the need for tools such as language and computers to mediate knowledge construction (Vygotsky, 1978). The best learning occurs in the middle of social interaction (Vygotsky, 1978). The adoption of a constructivist approach in technology-rich environment, promotes the full potential of technologies in enhancing learning (Campbell, 2004). Constructivism construes learning as a process in which the learner actively constructs or builds new ideas or concepts (Vygotsky, 1978). It involves activities in which learners actively construct new ideas or concepts based on both their previous and current knowledge. It is also known as social constructivism which indicates that knowledge is constructed when individuals engage socially in talk and activity about shared problems or tasks (Vygotsky, 1978). There are a number of versions of constructivism including: Active learning and Discovery learning. In either of these versions, the learner is expected to be actively involved, thereby making it learner-centred. However, this does not do away with the presence of a teacher. Instead, the approach needs a highly creative and imaginative teacher to make teaching and learning successful. As M-learning is learner-centred, its collaborative, interactive and cooperative aspects conform to the principles of constructivist theory of learning.

However, the constructivist learning theory is often criticized for three reasons which can affect implementation. Firstly, the theory is based on the availability of technological tools, such as computers, iPads and assistive tools, for it successful implementation in education. Thus, an

external factor, which includes lack of access to computers and software, or an inadequate technical and administrative support, can severely harm its adoption. Secondly, limited or improper theoretical understanding of the complicated concepts is involved. And finally, the main hindrance is the teachers' beliefs conflicting with the teachers' expressed pedagogical beliefs (Lonsdale et al., 2004, cited in Craig & Lom). Nevertheless, the possibility of espousing this theory to frame the implementation of the iPad in an educational context is still approached by several previous studies Cavus & Uzunboylu 2009; Colley & Stead 2004; Guenter, et al 2008; Holzinger, Nischelwitzer & Meisenberger 2005; Hsu, Wang, & Comac 2008; Macaruso and Rodman 2011; Rogers, et al 2010; Wyatt, et al 2010). In the same vein, Naismith et al (2004) argue that mobile devices help not only in contextualizing the learning processes, but they also expand it based on the interaction versus the intra-action which is of the essence of the constructivist theory. However constructivism was not the only theory that has been presented as a frame for studying M-learning.

### 2.4.2. Behaviourist Theory

The Behavioral Learning Theory by Watson in (1913) addressed the relationship between organisms and their environment (Overskeid, 2008). This relationship has been most aptly described by Naismith et al. (2004), by stating that, "learning is thought to be best facilitated through the reinforcement of an association between a particular stimulus and a response" (p.32). Applying this to educational technology, we can interpret that "computer-aided learning" is the presentation of a problem (stimulus), followed by the "contribution on the part of the learner" of the solution (response). Feedback from the system then provides the reinforcement. Many conventional frameworks of training, whether programmed-instruction or computer-based training, are grounded in the behaviourist learning theory. Thus, behaviourists support the existence of a scientific best way to learn and to work including the programmed instruction,

computer-assisted instruction, production lines, and waterfall models. Here, there is separation of thinking, doing, and learning. Hence, the task can be completely understood by employing objective ways to decompose problems into standardizable actions. In the Behavioral Learning Theory, all relevant knowledge can be explicitly articulated in varying operational environments: mass markets, simple products and processes, slow change, certainty.

The behaviourist model of learning views learning as most effectively enhanced through the reinforcement of stimulus and response. It is derived largely from the concept of 'conditioning', in which 'good behaviour' – which in the context of learning might be defined as the 'right answer' - is rewarded and 'bad behaviour' - an incorrect response, for example - goes unrewarded (Freeman 1975). The behaviourist conception of learning views the mind as rather akin to a programmable computer, and unsurprisingly its associated discourse using the language of science, variables, and correlations. According to behaviourism, it should be possible to quantify precisely the effect of the introduction of an iPad upon the learning outcomes of a set of students, through the conducting of student 'experiments' in a controlled environment. The results of any such experiments should be replicable so that the effects of the iPad can be verified by other researchers, leading to the possibility of reliable and confident predictions about how much of an improvement in EFL learning a student or teacher could expect should they choose to utilise iPad technology.

According to Rotfeld (2007), behavioural learning theory lays the "basis for theoretical explanations, prediction, and testing" (p. 376). In this view, behaviourists are not interested in what might occur in people's minds but the behavioural responses. As far as learning is concerned, behaviourist theory accounts for the activities that promote learning as a change in learners' observable actions.

In a study commissioned by Naismith et al. Future lab (2006), students were sent frequent revision materials and vocabulary messages via mobile phones using SMS texts. The psychology of SMS texting is in many ways beyond the scope of this paper, but it is not difficult to see how 'drill and feedback' type positive reinforcement could work through 'rewarding' students with vocabulary texts. For most young people, receiving a text has an element of positive emotional charge; it provides validation, a sense of inclusion and (rightly or wrongly) a sense of being valued. Harnessing these associations for the purposes of imprinting vocabulary upon the minds of students represents an example of how technology could effect a positive learning outcome, through the principle of a form of classical conditioning. (Naismith et al. 2006, p.14).

Another case study by Furuya et al (2004) demonstrates how students' learning benefits when they have access to mobile phones with online services, as these allow students to access practical exercises and multiple choice questions. The latter provide opportunities for positive reinforcement, and online materials provide students further opportunities to learn language by rote (Furuya et al. 2004). Finally, a study by Yuen and Wang (2004) illustrated how mobile devices, including the iPad, allowed students to practice speaking, listening and reviewing, as well as providing phrase translation services and live coaching(Yuen and Wang 2004). The process of learning, testing and reviewing was catalysed as a result of the use of mobile devices. Moreover, with the additional support of a live teacher to scaffold learning, the study provides some evidence of the effectiveness of mobile technology to enhance learning through a combination of classical conditioning, and scaffolding of the sort proposed by Wood, et al (1976).

A couple of case studies conducted as part of *Future Lab Series Report 11*(2006) demonstrate how mobile devices can enhance the ability of the EFL student to participate actively in the

construction of knowledge and learning. The report refers to the value of games in which the student participates in simulations of a particular system or process. In a game entitled 'the virus game', the students simulated the spread of a virus utilizing mobile devices. Moreover, the conclusion of the report was that the mobile devices 'facilitated, rather than hindered, normal interactions between the students – the devices augmented rather than replaced normal channels of communication' (Naismith et al. 2006, p.22). The report also describes another initiative developed by MIT, named the *Game To Teach* project, which explores how 'augmented reality gaming' can provide opportunities for students to participate in simulations of real world activities. In this kind of simulation 'context sensitive data and social interactions are used to supplement real world interactions' (Naismith et al. 2006, p.24). The technology used in this project makes explicit use of portable PCs, similar to the iPad, and the social interactions referred to include, for example, interviews with 'virtual' experts.

These two studies illustrate how the constructivist theoretical framework can work in tandem with M-learning. It should be stressed that although constructivist learning might involve simulated social interactions, this model of learning tends more to emphasize the sole responsibility of the students in discovering knowledge for themselves. It does not fully account for, nor even acknowledge explicitly, the social dimension of learning, nor fully explore how mobile technologies such as the iPad can facilitate this social dimension. It is with this observation in mind that we turn to the evaluation of the next theory of mobile learning: 'situated learning'.

One of the most powerful critiques of the behaviourist approach of learning originates precisely from the works of early constructivists such as Vygotsky (1978) and Wood et al (1976). In the previous case study by Yuen and Wang (2004), part of the utility of mobile devices resided in

their function as a tool for promoting classical conditioned responses in the students of EFL. However, behaviourism does not account for the ways in which mobile devices can promote active learning on the part of the students themselves. They are seen as largely passive in the learning process, subject to the programs of the mobile device, which drill the student in knowledge, and reinforce it with tests and texts. Constructivists, however, view learning as an active process. Current and past knowledge are combined to construct new knowledge, and to deduce new principles, and so from this perspective, it is critical that M-learning should engage students in this process of active knowledge construction. The role of the teacher/instructor is to promote this sort of 'discovery learning' (Bruner 1966). For example, in Yuen and Wang's (2004) study, the role of the online coach would be to direct student to sources of knowledge which may enable them to discover the 'right answer' for themselves. Mobile devices thus possess a twin pedagogic potential for the student. At one level, they allow the student to be embedded in a context which is realistic, whilst simultaneously allowing the student to have direct access to supporting tools on a networked device. They thus become part of the learning system, and knowledge exchange with other students becomes part of the constructive process of learning.

### 2.4.3. Socio-cultural Theory of Learning

In socio-cultural perspectives on M-learning, the emphasis upon 'content' is downplayed even further in favour of the primacy of communication as the central aspect of the learning process. It is when students meet other students in, for example, collaborative group settings that concepts become structured and re-structured. Moreover, it is in the confrontation of one's own preconceptions regarding a topic with the conceptions of other students, that cognitive schemas become smashed and remade (Taylor 2002). It is important to appreciate that in this model there is more equality accorded to different participants in the learning process. Peer-to-peer

communication, communication with family and friends, may be just valuable as communication with an 'expert', and all are encouraged. It is not difficult to see how useful mobile technology can be for 'casting the net' of potential learning contacts as widely as possible. Others engaged in learning can access each other rapidly any time or place, with a view to the sharing of knowledge and experience, as well as even more trivial forms of 'gossip' associated with the development of a community learning identity and 'community of practice' (Wenger et al. 2002).

Three particular forms of socio-cultural learning warrant discussion. First is *collaborative learning*, which focuses particularly upon the use of mobile devices to enhance collaborative work between students. In this respect, both the intrinsic capabilities of mobile devices such as the iPad, as well as their wide contextual usage, facilitate collaboration. IPads and other mobile devices can communicate with each other in real-time, when the user is in transit. This facilitates the rapid sharing of data and messages, as does the fact that such devices can be connected to a data network which is shared (Sharples 2002, p.506).

*Conversational Learning* is another sociocultural theory of learning articulated by Pask (2006). It takes as its premise the idea that learning occurs through conversations with different knowledge systems. The conversations which characterize learning in this scheme involve not just teachers and peers, but also conversations with institutions and artifacts of the external world. Mobile technology functions most effectively in conversational learning when it is used to provide a shared space for conversations.

A case study of a Mobile Computer Supported Collaborated Learning system (MCSCL) outlined how conversational learning could be aided when a teachers Pocket PC was used to send activities to students via a mobile network. Students would then work in groups collaboratively

on a project, come to a consensus solution, and then submit this to the teacher through the Pocket PC (Cortez et al. 2004, p.70). A third sociocultural theory worthy of discussion is the *Activity Theory*, which develops the thinking of the celebrated educationist Vygotsky. In activity theory, learning is seen to be mediated by social rules and conventions about the division of labour within a community. These rules govern and to some extent place limits upon our actions, and their meaning (Vygotsky 1987). The advantage of Activity Theory is that it provides a useful framework for evaluating technology-rich environments, since the emphasis is not simply upon the interaction of the individual and the computer, but upon the technological and social environment in which the learning activity takes place. The case study of a museum art gallery exhibit alluded to earlier demonstrates how activity theory can explain the value of mobile technologies in improving the learning process. The Personal Digital Assistants which formed part of the study utilised a variety of media to provide background information on the exhibits, as well as games, opinion polls, and the ability to communicate via text with other museum visitors. In this technology rich environment, with access to extensive multimedia, the insights of activity theory help us to understand how mobile learning transformed the learning experience for visitors to the museum under investigation (Scanlon et al. 2005).

### 2.4.4. Lifelong Learning Theory

Theories relating to life-long and informal learning are particularly relevant in the context of our ever-changing world, in which technology and language continues to evolve. If EFL students are to be equipped to face the constant additions to the English language, they need to experience language learning as a lifelong event which will occur outside formal learning contexts such as classrooms and colleges. As Tough (1971) explains, learning occurs constantly throughout an individual's life, and may be intentional or unintentional. Intentional learning may occur when individuals initiate intensive projects such as building a shed, or learning to cook different types

of cuisine. Unintentional learning occurs in the course of conversations, watching television or just watching the world go by. Many studies suggest that most learning happens outside formal learning, and it is not difficult to see why this should be so. Individuals learn from the cradle to the grave, and the period of formal instruction lasts only fourteen or so years in most countries (Nordin et al. 2010, p.2). Mobile technologies such as the iPad have the advantage of being portable, unobtrusive and easy to accommodate in everyday life situations where some specific knowledge may be needed. In the context of EFL, iPads allow students to check the meaning of words quickly, as well as their pronunciations. They also provide support for EFL students in real- life English speaking scenarios where linguistic assistance is needed.

In mobile learning, a constant supply of lifelong information and interaction with education content is key. Podcasting Information resources as well as Mobile web site Learning happens all the time, and is influenced both by our environment and the particular situations we are faced with. From a different perspective, lifelong learning needs to promote effective educational opportunities in the many learning settings through which people pass, including home, school, work, and the larger community. According to Naismith et al. (2004), lifelong learning includes in its arena all activities that support learning outside a dedicated learning environment and formal curriculum. A lifelong learning approach permits integration of the best features of school, community, home, and workplace learning. Naismith et al. (2004), propose that such kind of learning can be intentional, or imbibed through deliberate learning 'projects', or it may be accidental, such as acquiring information through conversations, TV, newspapers, or simply observing the world. Consequently, a theory of lifelong learning must investigate new frameworks to learning required by the profound and accelerating changes in the nature of work and education. These changes include:

- Increasing prevalence of high-technology jobs requiring support for learning on demand because advance coverage of all concepts is impossible
- The inevitability of change in the course of a professional lifetime, which necessitates lifelong learning; and
- The deepening (and disquieting) division between the opportunities offered to the educated and to the uneducated.

Lifelong learning entails a deeper understanding of the co-evolutionary processes between fundamental human activities and their relationships and interdependencies with the new media. Although Lifelong learning does not require a completely educationally managed society, and it does not imply that learning is an externally imposed requirement, but it refers to a society in which learning possibilities exist for those who want to learn. The learning process requires progress and an integration of new theories, innovative systems, practices, and assessment. To make lifelong learning a significant part of human life, new intellectual spaces, physical spaces, organizational forms, and reward structures need be created to allow individuals, groups, and organizations to personally engage in and experience the new forms as risk takers who use their creativity and imagination to explore alternative ways of learning. These new forms of learning from a lifelong learning perspective include Self-Directed Learning, Learning on Demand, Informal Learning, and Collaborative and Organizational Learning.

Sharples (2000) provides several examples of ways in which lifelong learning and iPad M-learning have a natural affinity. Lifelong learning, for example, is individualised and student-centered, where mobile devices are also individual and user-centered. Life-long learning is also situated and collaborative, where M-learning is also mobile and networked. Perhaps most importantly, lifelong learning is everywhere – ubiquitous – in the same way that iPads and mobile learning devices are; when they are needed, they are generally accessible. The durability

of mobile devices makes them cost-effective solutions for individuals as they learn and navigate their ways through the problems presented to them throughout life, in the real world.

### 2.4.5 Situated Learning Theory:

Situated learning theory is concerned with how learning occurs every day, and does not recommend teaching to be "situated" or "relevant" (Clancey, 1995). Situated learning is a theory about the nature of human knowledge. The theory claims that knowledge is dynamically constructed as people conceive of what is happening, talking and emotionally important to them to them (Clancey, 1995). Especially, the conception of activity within a social matrix shapes and constrains what one thinks, does, and says. The theory implies that our action is situated in our role as a member of a community (Clancey, 1995). The theory of situated learning claims that knowledge is not a thing or set of descriptions or collection of facts and rules. Instead, people model knowledge by such descriptions. Situated learning regards human knowledge as is not like procedures and semantic networks in a computer program (Clancey, 1995). Hence, human knowledge should be viewed as a capacity to coordinate and sequence behaviour, to adapt dynamically to changing circumstances. By saying that learning is situated, the theory explains the nature of human concepts (Clancey, 1995). The theory refutes the fact that people learn best by "trying something out" but learning occurs in all human activity, all the time (Clancey, 1995). According to Naismith et al. (2004), mobile devices are especially well suited to context-aware applications. This is due to the fact that they are available in different contexts, and so can draw on those contexts to enhance the learning activity.

As previously mentioned, this is an inexhaustible list of theories that can be used as frameworks for studying the iPad as a mobile device learning tool. Brown’s (2005) Navigatonism Theory was suggested as it considers learning happen in communities of practices and social net working

environments. As combining all these theories to study M-learning would be take more than one PhD thesis, the researcher opts to select the three previously mentioned theories to underpin this thesis study: Connectivism Theory (Siemens, 2004), Activity theory (Engestrom 1987) and Conversation theory (Pask 1975) trying not to exceed the defined theoretical scope of this study which is social constructivist in nature.

Having reviewed the models and the theories that have been used to investigate M-learning in the context of education, the different aspects of M-learning and English language teaching, M-learning applications, the iPad as an M-learning device and students' perspectives on M-learning are presented. Moreover, the teaching strategies for the two skills of listening and speaking are introduced along with the use of the iPad in the schools of UAE in general and in Secondary Technical Schools in particular, and its effectiveness in these same Secondary Technical Schools. Finally, the literature on empirical studies of M- learning is thoroughly reviewed in the following sections.

**2.5 M-learning and English Language Teaching:**

Mobile devices, at first, appeared peculiar for pedagogical use, but they have slowly become acceptable (Chinnery, 2006). Great changes have been witnessed in the use of PDAs, IPods, podcasts, and cell phones for mobile (M) teaching and learning of languages (Chinnery, 2006). M-learning is the teaching and learning through Mobile Technologies (MT) (Kinshuk, 2003). M-Learning allows learning in any location or at any time (Kinshuk, 2003). In the views of Nyiri (2002), M-learning arises in the course of person-to-person mobile communication. Teaching through the/an M-learning approach entails the use of phones, iPads, and Personal Digital Assistants (PDAs). Nyíri (2005) and Mellow (2001) views M-learning as a means for improving enhancing the broader learning experience. The two studies further regard M-learning as a

powerful method for engaging learners on their own terms. Learning is considered mobile in three different ways: it is mobile in relation to time, in relation to different places, and regarding space (Vavoula & Sharples, 2002). In other words, the mobile learning system can deliver education to learners anytime and anywhere they need it (Vavoula & Sharples, 2002).

M-learning is limitless regarding the content and geographical extent (Jalalyazdi et al 2009), and hence, this offers dispersed virtual classrooms accessible any time (Jalalyazdi et al 2009). Another variety of M-learning that is employed exclusively for language learning is called Mobile assisted language learning (MALL). Although, MALL is an example of technology-based language learning (Guerrero, Ochoa, Collazos & 2010), it is different from computer-assisted language learning (CALL) because MALL focuses on the spontaneity or continuity of access and interaction across different contexts of use (Kukulska-Hulme, 2009).

Gaudry-Perkins and Dawes (2011) stated that mobile learning ranges from "simple SMS messaging, MMS live classroom sessions, the web, and podcasting to audio-to-text or text-to-audio applications. The pedagogical approach in M-learning provides enriched learning experiences via mobile whiteboards for interactive discussions, educational video, problem-solving aptitude games, and logical reasoning. Mobile technology allows the student to be more responsible for the acquisition of information as students are more active in obtaining their education (Kukulska-Hulme, Shield & Hassan, 2010).

M-learning is often regarded as a subset of e-learning and is seen as a good supplement to e-learning or face to face interaction (Sandberg, Maris & Geus, 2011). However, M-learning can never replace traditional education or the role of teachers (Lacina, 2004). Instead, it is a tool that helps to make education more accessible, more efficient, more cost-effective, and more enjoyable. The unique model of mobile learning creates various learning environments since the

students can download applications synchronously or asynchronously. They can also access notifications, weekly activities, feedback, assignments, their courses, online libraries, grading reports and these have increased their interest in studies (Kristoffersen & Ljungberg, 1998). The learners who are engaged in this type of learning can personalize their learning environments by deciding where and when to learn (Kukulska-Hulme, 2006).

Also, the use of computers in language teaching also guarantees to develop students' cooperation skills, communication skills, problem-solving skills and life-long learning ability. In Taiwan, tablets such as iPads have been designed and developed primarily as an interactive content consumption device, which allows multi-touch experience. The iPads provides a platform for audio-visual media including books, periodicals, movies, music, games, and web content.

Although using mobile technologies in education is a fairly new field, various studies have been carried out to examine the viability of using mobile technologies for pedagogical activities in educational institutions. Perkins and Dawes (2011) examined the benefits of using mobile technologies for pedagogical purposes. These studies describe teaching and learning through the mobile technologies as a very good way to make the students active participants in the acquisition and dissemination of knowledge.

Teaching and learning English through mobile technologies afford the option of mobility due to the structure of the device and the participants involved (Roschelle, 2003). This feature offers a transition from the occasional, supplemental use of computer labs, to the frequent and integral use of portable computational technology (Roschelle, 2003). Based on these views, access to technology is important especially in the teaching of English language as a second language (Kinshuk, 2003). Access to mobile technology in teaching English is preferred because it enables learners to practice constantly the language (Nyíri, 2005). Access to mobile technology also aids

the easy recollection of what has been taught in English, thereby making it possible for learners to put into practice the learned concepts in real life situations (Nyíri, 2005). Mobile technology further allows for variety and creativity in teaching and learning, thereby increasing interaction and interactivity between teachers and students, which results in creativity and critical thinking (Kweyu and Sevilla, 2012).

At Makerere University, Sebbowa (2012) investigated the role of mobile phone forums in enhancing interactivity in teaching. Sebbowa considers mobile phone forums as appropriate in the large class situations in an educational situation. In her findings, Sebbowa indicated that mobile phone forums enhance interactivity and collaboration between teachers and students.

In North Nigeria, Nwocha (2010) carried out research to further the study of English through M-technology. Similar to Mohammed and Woollard (2009), Nwocha (2010) based his study using an SMS based mobile learning system to teach English to high school students. The researcher noted that when tested, the students under experiment performed better than the ones who were taught in traditionally based classrooms (Nwocha, 2010). Clarke et al. (2008) also studied the viability and the acceptance of using the SMS-based learning system to teach and engage students in language learning at Hong Kong University of China. The findings of the study showed that the students found M-learning worthwhile and engaging, and it helped them in their acquisition and retention of the language needed via this learning system.

Even though M-learning exhibits inherent advantages in the teaching and learning of the English language, studies, some limitations to its effectiveness and efficiency have however been identified (Mellow, 2001; Kukulska-Hulme, Shield & Hassan, 2010). The first limitation is that the students complained of the network problems during their attempts to log on to the internet. As a result, it takes students much time before they can surf the internet. The second limitation is

that the students' attention span did not last for long, not much more than an hour (Mellow, 2001). The students often got distracted, and they had to be reminded that they were in a class and needed to read and type in the English class when necessary. Third, it was noticed that the students often resorted to using text-based SMS style of writing, which already had begun to reflect in their assignments. Despite all warnings to desist from using the text-based SMS style of writing, the students still used it unconsciously. The last limitation of M-learning was the expensive funding needed for teaching through the mobile phone. Here, students cannot be expected to pay for the airtime used to learn and the salary of a teacher cannot cater for the cost of mobile teaching (Kukulska-Hulme, Shield & Hassan, 2010).

In M-learning, students' preferences should be taken into account as an important factor. English teachers need to consider whether the students would prefer teaching with mobile technology to face-to-face teaching or a blend of both (Niederhauser & Stoddart, 2001). In studying this factor, it was discovered that both teachers and students preferred the use of both methods of teaching. The preference was due to their belief that some aspects of the English language cannot be taught effectively through the mobile phone, and hence need a blend of interpersonal approaches. Those aspects include the English clause and oral English. According to the students, they would need face-to-face teaching to be able to overcome the challenges posed by those aspects of the English language (Geddes, 2004). The English teachers also preferred the blending of both approaches as long as both parties are aware of the rules of engagement and the ethics of using mobile technology to teach the English language (Mellow, 2001). Using both methods of learning, according to the teachers, would be good because it incorporates what the students enjoy and what is already on the ground, thereby increasing learners' interest in learning. In assessing the choice of digital format that students and teachers would want in M-learning, the data analysis revealed that the participants preferred the use of browsing and the mobile chat application

(Hartnell-Young and Heym, 2008).. Students and teachers also prefer the use of games and audio format because they are capable of eliciting excitement and stimulating the interest of the learners (Hartnell-Young and Heym, 2008).

Chang (2010) argued that mobile learning is an audio-based learning project that allows learners to participate in an asynchronous learning discussion on mobile devices instead of in text-based discussion. Learners can download audio files recorded by their peers and listen to these recordings while on the move (Chang, 2010).

Dawabi, Wessner, and Neuhold (2003) highlighted the flexibility of learning and hands-free operation, as the advantages of audio-based learning. However, Park (2011) presented the disadvantages of audio-based learning in M-learning. Park (2011) argued that audio-based learning lacks the ability to search for a message. Audio-Based learning also has background noise and difficulty in reviewing the recorded audio files. A comparison of the authors' views depicts that M-learning is not without weaknesses. Thus, in using mobile technology to facilitate M-learning, the key focus should be on limiting the negatives.

### 2.6. M-Learning Applications and English Language Teaching

There are a few iPad applications that have been developed such as, Skype, Google hangouts, Twitter, notes, online video streaming from YouTube or Google Docs (Gillispie 2013; Whittingham et al. 2013). These applications provide teachers with different means to teach English and students with means to learn. For example, a number of digital audio and video files are available which may be streamed through the Internet to allow students and teachers to access a wide variety of material. These may be used on both the iPad and through m-leaning to enable students to listen to native English speakers and teachers can use these as learning materials in their courses. These come in a variety of formats too, as they may be in video,

podcast, e-books (with an audio track) or as single tracks (Bryan and Hegelheimer 2007; McCarty 2005). Students may also create their own tracks by using apps on their iPads and mobile phones (Aguilar 2007). These apps may be used to enable teachers to understand or to assess how student's learning has progressed over a period of time. Thus, from this one example, we can see how versatile using iPads and M-learning is for both teachers and students when they seek to develop their skills. However, we must consider how effective these means are for students, in the context in which they are seeking to develop their oral and listening skills.

E-learning and M-learning have reduced the distance between students and teachers and make learning experiences more collaborative, continuously accessible and richly contextualized (Barreto 2003; Serrano-Fernández 2009). A number of studies have been undertaken to seek to assess how effective differing teaching techniques may be when English is taught as a foreign language via M-learning or iPads (Kim 2011; Pollara and Kee Broussard 2011 a and b). Many of these studies have been devised and undertaken by using a phenomenological approach. This is often adopted to understand how actors view a specific phenomenon. Generally this type of research is undertaken by using inductive, qualitative methods such as interviews, discussions and participant observation (Cammarata 2009; Gan 2013). Thus here, it is the experiences of the actors that are examined to ascertain how they feel about their experiences (Lin, Groom, and Lin, 2013; Williams et al. 2004).

For example, Spires, Hervey and Watson (2013) undertook a study where twenty teachers were asked whether or not technology assisted them with their teaching. Their results indicated that a growing number of teachers supported the use of technology in the classroom when they were teaching. Comparatively, Tai and Chuanh's (2012) study on the use of technology investigated how English teachers have integrated technology into classroom learning. They found that

'…teachers need to know why they do what they do in order to transfer their knowledge to their own classrooms, to authentic learning environments, using technology while learning to integrate it effectively is a must' (pp.1-2). Hence, teachers may support technology which can be effectively used to teach English as a foreign language to students as long as they understand how to integrate this technology to get the outcomes they desire. This is an important point, as if teachers try to use M-learning or iPads in the classroom for meaningful learning to take place, they must consider how they are used as this effective use will affect the outcome of their teaching.

Other empirical studies of iPad and M-learning, in the domain of English language teaching, have also been undertaken, but the results from these studies are mixed, as they do not indicate if M-learning and using iPads in the classroom has a positive effect on students attaining their learning outcomes (Bennett 2011; Brindley, Walti and Blaschke 2009; Gong and Wallace 2012; Shyamlee and Phil 2012). These findings may demonstrate that there is no conclusive evidence that indicates how effective M-learning or the use of iPads is when they are used. However, these studies have only focused on measuring a few fixed factors to determine whether or not these approaches are affected.

In the modern world, teaching English as a foreign language is undertaken in a number of ways, though most teachers believe the four skills need to be developed through reflecting upon speaking, listening, reading, and writing (Read and Roe 2013). It is the first two of these skills that we will concentrate on here; these may be taught in line with different models of learning. For example, behaviourists believe that learning is enhanced when a stimulus and response approach is utilised (Csizér and Kormos 2009; Hinkel 2012). Whereas, constructivists criticize this approach and advocate that learning should be undertaken through a process of discovery so

that students actively take part in the process (Cavus and Ibrahim 2009; Göbel and Helmke 2010). From here, students discover the answers to questions themselves. Others advocate that learners must engage meaningfully in their learning experience in order to assimilate new knowledge (Zamorshchikova, Egorova and Popova 2011). This model of learning is often referred to as situated learning. In comparison to this, other factors are considered in other types of learning theory, for example in socio-cultural learning there are a number of theories such as, conversational learning and activity theory (Pilgrim, et al 2011; Thorne and Smith 2011). These theories describe the means through which learning may be undertaken by students by using various approaches to teaching. Finally, there are informal and lifelong learning theories that state that learning is an experience that is undertaken throughout life and over time.

Additionally, the adoption of the aforementioned learning theories may affect students' abilities to learn (Thorne and Smith 2011). For example, if a behaviourist approach were adopted, students would need to develop their skills through listening to an audio track and then copying this in a classroom to develop their skills. Comparatively, if a constructivist approach were used, they would take part in conversations whilst listening to either an audio track or conversing with each other. Though, according to Richards and Rodgers (2001), "integrated language instruction that engages students in meaningful communication and enables them to attain their learning objectives can be found in an "unlimited" array of models, teaching materials and techniques"(p.164). A few examples of such integrated models with a communicative and contextualized focus are: content-based (sometimes also called theme-based), task-based, text-based (also called genre-based), discourse-based, project-based, network-based, technology-based, corpus-based, interaction-based, literature-based, literacy-based, community-based, competency-based, or standards-based (p.165). Therefore, we can see that it may not be the learning approach that is adopted by teachers which affects a student’s ability to master English

but how it is delivered through teaching materials or techniques. Thus, we must consider how teachers seek to educate students as they seek to develop their oral and listening skills as they learn English as a foreign language. Here, we shall consider two methods in particular, M-learning and the use of the iPad.

Two of the most essential skills that must be mastered by students who seek to learn English as a foreign language listening and speaking. Listening consists of the student being able to distinguish the differences between sounds, so that they can understand intonation, rhythm, or stress and when this is applied to exact variable meanings (Read and Roe 2013). This understanding enables the students to be able to grasp and assimilate the meanings that are associated with the vocabulary that is being used by the speaker they are listening to (Geranpayeh and Taylor 2013). Therefore, when students are seeking to develop their listening skills, it is important that they hear native language speakers using natural speech in a different number of contexts so that they are able to identify patterns or predict the language which may come next without necessarily having to listen to the sentence or phrase which is being spoken. This technique assists the student to be able to understand the speed, repetition, or interactivity and how speakers of English communicate with each other (Ramirez and Quijano Plata 2013) which enhance the student's skills and capabilities when they are learning English as a foreign language (Abu-Rabia et al. 2013). Therefore, it is essential that all students be given the opportunity to listen to and to engage in a number of means through which they may hear English being spoken. This will also assist students to develop their speaking skills.

Speaking is another skill that needs to be mastered by those who seek to learn English as a foreign language. Here learners must be able to converse by regulating the tone, stress, or rhythm that they use when they are speaking in conjunction while retrieving the vocabulary that they

have learnt (Read and Roe 2013). In line with this, whilst they are developing these skills they must simultaneously be aware of the speed, repetition and their interactivity with others as each of these elements effects how they are speaking of English. Alongside this, these learners must learn to cognitively process what is being said to them whilst they are contemplating their responses to their fellow students (Goh and Hu 2013). These types of interactions may also be practiced under differing circumstances through face-to-face conversations or through spoken interactions that are undertaken by using online tools such as Skype or audio blogs (Zou 2013). Hsu, Wang, and Comac (2008) used audio blogs to "manage oral assignments, to interact with students, and to evaluate performance outcomes" (p.181). They recorded oral assignments through mobile phones and then these assignments were submitted to the student's tutors for assessment. This assisted these learners to develop their oral skills by using a variety of online tools (Hsu 2013). It also gave them the ability to practice what they had learnt and to get feedback from their teachers.

From this conducted study, we can see that the development of oral and listening skills, which are an integral part of learning a language, are interlinked and complex (Geranpayeh and Taylor 2013). Students must simultaneously master such skills so that they are able to converse and understand English while interacting. Listening and speaking skills may be taught through a variety of means in various contexts (Levy 2009) a using variety of models of learning.

### 2.6.1. The iPad as an M-learning Device

Mobile devices have created a stimulated considerable interest amongst the education fraternity. Technologies such as iPads and iPhones, PDAs, and portable netbook computers, have set learning free. These New mobile technologies, are being increasingly used by the students as well as teachers, and are often advertised around the world as '*revolutionary'* devices that can

transform the nature of the learning and teaching process (Webb, 2012). This section of the study explores the emergence of the iPad in the educational industry and how it is used as an M-learning device. Existing studies suggest that this device may offer an exciting platform for students in learning and refining knowledge in an interactive way.

The study by Greenfield (2012) explores the use of an Apple iPad in the classroom, which can open up new opportunities for exploring literacy. It was argued that the iPad offers several applications that can be beneficial to student's learning experiences related to reading instruction (Greenfield, 2012). Also, the several applications which have been developed for iPad learning enhance different texts being read in the classroom, provide resources for understanding the material further or for extending and assessing reading comprehension (Greenfield, 2012). Moreover, it is acknowledged that the iPad can also be used to access e-books, which provides students with a multimodal reading experience that will engage them with animation and sound (Greenfield, 2012).

The wide acceptance of iPads is due to its more advanced features, which have been successfully and widely embraced by the universities. They have become popular educational devices because of the availability of a significant number of educational applications. There are apps available ranging from study aids to collaborative and interactive learning apps. A major perk from the usage of these applications is that they support traditional learning activities, instead of merely enhancing them.

### 2.6.2. Students perspective on M-learning (IPad)

Here, the student's perception of the use of tablets and mobile devices in personalizing their learning experience (inside or outside the classroom) will be explained as it will give an insight into how such devices affect a student's life. The student's expectations and their attitude

towards M-learning will be discussed as well as how iPads can benefit them in their studies from their experiences on M-learning.

Valk, Rashid, and Elder (2010) demonstrated how mobile phone-facilitated learning can give students in developing countries increased access to educational materials and services, particularly in rural and remote regions.

The estimates given by Valk, Rashid, and Elder (2010) show that although students still rate laptops (85 percent) as the most important devices to their academic success, the importance of mobile devices such as tablets (45 percent), smart phones (37 percent), and e-book readers (31 percent) is witnessing an increase. Increasingly, students say they want the ability to access academic resources on their mobile devices.3 In fact, 67 percent of students' smart phones and tablets are reportedly being used for academic purposes, a rate that has nearly doubled in just one year reports, Chen and Denoyelles, (2013).

The studies conducted by several researchers, such as Cavus and Ibrahim (2009), Lu (2008) and Stockwell (2010) have reported positive reactions to the use of mobile devices for language learning because of the portability and perceived convenience of these devices.

Further, the study done by Kim et al (2013) revealed that the majority of participants reported that discussion boards have several benefits (e.g., creating and sharing messages) as an online collaboration tool for mobile learning activities.

As Hutchison, Beschorner and Schmidt-Crawford (2012) have shown, iPad apps and mobile devices can be effective instructional tools when applied appropriately by trained teachers. Hutchison, Beschorner and Schmidt-Crawford (2012) found that using the iPads for literacy instruction not only supported student learning, but students also get highly engaged and can

demonstrate ways of responding to text using technology tools. The study also observed that most of the participated students in the study were interested in and familiar with the use of M-learning techniques. However, the higher education providers should encourage different M-learning initiatives to provide more interactive and flexible learning process (Beschorner & Schmidt-Crawford, 2012).

### 2.6.3. The use of IPad in an Arabic Context (UAE)

The decision to introduce the use of iPads in schools was taken by the UAE Ministry of Higher Education on April 2012. This move was taken to equip all the higher learning institutions with iPads for the academic year starting in September 2012. The program aimed to prepare high school graduates with the necessary academic skills for undergraduate study. The notable academic skills for undergraduate study, being targeted with iPad use in the UAE include English language proficiency, IT skills, research skills, library skills, and study skills.

The objectives of the iPad initiative in UAE were outlined as follows:

- Achieve individualized student learning consistent with 'Post-PC Era' trends.
- Introduce challenge-based learning or other progressive classroom pedagogy
- Increase student participation and motivation.
- Enhance opportunities for cross-institutional collaboration between faculty members.
- Increase faculty collaboration through cross- institutional repositories of learning objects.
- Facilitate the migration to e- books
- Empower faculty to engage students in authentic, enduring learning opportunities
- Create practice-ready students who will lead their organizations into a post- PC era.
- Model 21st Century learning by integrating relevant emerging technology in and beyond the classroom (Cochran et al. 2012, p.1).

This initiative was meant for the foundation programs at three Federal Institutions, i.e. the Higher Colleges of Technology (HCT), Zayed University (ZU), and the United Arab Emirates

University (UAEU). These three institutions were encouraged to shift education into the modern mobile learning era, with the aim of 'disrupting' the traditional notions of teaching and learning, and align these modes with the increasingly demanding needs of 21st century learners. During the last two years, iPads emerged as a standard choice for Smart Learning" across the UAE in general and for STS in particular

After the implementation of the iPad, Hanadi and Al Suwaidi (2014) evaluated the effect of the use of iPads on the performance of students in Secondary Technical Schools (STS). The study explored the use of iPads in STS schools, how iPads are actually part of the classroom environments and their impact on teaching and learning. The study compares their results before and after using iPads and provides some insights about students' and teachers' perceptions of the use of this modern device. We used a combination of qualitative and quantitative analysis with the same sample of students. Hanadi and Al Suwaidi (2014) concluded that the high achiever group was less affected by the introduction of iPads than medium achievers or low achievers whose marks were really different when using tablets. The study further noted that student's marks improved in nearly all the subjects when using iPads.

### 2.6.4. The Use of M-learning (iPad) in Secondary Technical Schools

The existing teaching methods and mobile learning practices in higher education will be discussed under this section. The educational app environment and the applications of iPad that are used in the classrooms will be described. Such applications are: content consumption and creation applications for organizing the learning materials, content delivery applications comprising of lecture presentations, collaborative and interactive learning applications for enhancing student's engagement in class, course management applications, teaching and learning enhancement applications.

One of the main reasons for increased attention being paid to M-learning is the increase in the number of mobile devices (such as mobile phones, PDAs, laptops, and iPads) as well as enhancements in the technological capabilities of these devices.

With the rapid spread of iPads and other M-learning devices in the educational sector, a number of M-learning applications are readily available in the market today. For example, *Alykko* is an intelligent mobile tutoring application for instructors to manage their tutorial material using mobile and web technologies (Hofmann, Labs, & Woods, 2010). *Active campus* is another type of M-learning application used as a context-aware organizer to manage and support some learning activities (Mallikharjuna, Sasidhar, & Satyendra, 2010). *MOODLE* (Kasi, Kusuma, & Kumar, 2012) is a learning management system and POODLE (Uhlig, Neiger, Rodgers, Kagi, Leung, & Smith, 2005) is a form of MOODLE after redesigning it to be compatible with wireless networks and suitable for hand-held devices. Recently, many researchers and app developers are proposing new, advanced and student-friendly apps to enable the users to make the best of this latest technology. For instance, a group of Malaysian researchers recently proposed an M-learning approach that uses mobile graphs to trace students' performance and progress (Wasserman, 2010).

It has been argued by Hanadi and Al Suwaidi (2014) that the main target group in STS are the UAE nationals who have a general tendency to consider technical education as a second choice, and a not very attractive one for ambitious and skilled students. Thus, the development of STS has emerged as a unique opportunity for UAE nationals (both male and female), to complete their education and professional training in technical areas. The most crucial perceived benefit of this step is that it will enable the UAE nationals to qualify and hence, take part in the development of vocational and technological plans embedded in the UAE government's vision

for 2021 (UAE Vision 2021 , 2010). Additionally, this is also assumed to benefit the students by increasing their probability of getting a job after graduation. In evaluating the effect of the use of iPads on the performance of students in Secondary Technical Schools (STS), the authors ( Hanadi and Al Suwaidi ,2014) explored how iPads are part of the classroom environments and their impact on teaching and learning. The study concluded that the high achiever group was less affected by the introduction of iPads than medium achievers or low achievers.

In another study, Hutchison, Beschorner, and Schmidt-Crawford (2012) presented evidence on the use of M-learning in secondary technical schools. The study determined the effectiveness of the the iPad, and pointed out that many teachers acknowledge the need for reading, writing, and communication instruction in digital environments.

In addition, various studies have examined the viability of using mobile technologies for pedagogical activities in educational institutions. For instance, Perkins and Dawes (2011) examined the benefits of using mobile technologies for pedagogical purposes, and described teaching and learning through the mobile technologies as a very good way of making the students active participants in the acquisition and dissemination of knowledge in secondary technical schools.

The use of M-learning technologies for teaching and learning affords the option of mobility due to the structure of the device and the participants involved (Roschelle, 2003). The mobility enables secondary school students to transition from the occasional, supplemental use of computer labs, to the frequent and integral use of portable computational technology (Roschelle, 2003).

This describes the effectiveness of iPads in the education sector by explaining the impact of these devices on students' learning process. The impact of iPad applications on the learning

ability of a student is evaluated. The points to be considered here are: impact on student engagement, motivation, confidence and communication.

With the creation of STS's own iBooks and Apps, iPads emerged as the perfect model to be used in the classroom. This new kind of dynamic online textbook includes up to date, interactive features, multi-touch textbooks, interactive images and galleries, 3D images, highlighting and note taking facilities, and also interactive drill and practice exercises (Suwaidi, 2014).The effectiveness of iPads in secondary technical schools has been analyzed by Shamir, Korat and Shlafer (2011), especially the impact of a tutor-supported use of eBooks. The study showed that only a tutor-supported scenario can lead to significant improvement of emergent word writing and phonological awareness through iPad learning. Jones and Brown (2011) also evaluated the impact of electronic books on the reading engagement of third-grade students, and showed that the possibility to choose a book on the website had a positive effect on the motivation and engagement of students. Active student engagement, increased time for projects, improved digital literacy, and digital citizenship, were also reported to be the positive outcomes of using iPads in learning, in a study conducted by Chou (2012) In another study, Hutchison, Beschorner, and Schmidt-Crawford (2012) found that using the iPads for literacy instruction support not only student learning but also facilitates greater student engagement. Consequently, the students were able to demonstrate creative and unique ways of responding to text through a technology device (Hutchison, Beschorner, and Schmidt-Crawford, 2012, p. 23).

Further, the study conducted by Garcia (2011) in five sections in a US history class, aimed at evaluating the student' performance under two scenarios; traditional learning methods, and secondly using iPads. The study results showed that the use of the iPad stimulated *collaboration* and *cooperation* among the students, which was not present in the class periods that used

traditional sources. This was observed as the students using paper readings, were engaged only in reading the material independently. On the other hand, it was seen that the iPads encouraged group collaboration which eventually had a positive impact on the student's achievement.

The study results by Hanadi Al Suwaidi (2014) supported the argument that iPads serve as a major motivational factor, and helps students to improve their set of skills and knowledge. Also, iPad usage encourages collaboration within peer groups, personalizes learning and instills creativity.

### 2.7.1 M-Learning and English Language Teaching strategies.

Kervin, Verenikina, Jones and Beath (2013) argued that by adopting mobile technologies for teaching and learning English, the technologies should support social-constructivist pedagogical approaches to learning. Herrington, Herrington, Mantei, Olney and Ferry (2009) also viewed M-learning as a collaborative pedagogical approach where learning is characterized by the sharing and construction of knowledge among learners using technology as the primary means of communication. Here, a collaborative learning strategy should be grounded in social constructivism (Kukulska-Hulme, Shield & Hassan, 2010). To support the teaching and learning process effectively Cochran, Ben Halim, Khalil and Gilroy (2012) emphasized that teachers need to integrate the technological capabilities available in a way that enriches the teaching and learning process instead of just replacing the traditional form of teaching and learning. Many of the approaches can be traced to the Laurillard's Conversational Framework (2002). The Laurillard's Conversational Framework was developed based on several learning theories including instructional, constructivism, and social constructivism. Based on these theories, teachers' strategies, while teaching English, need to ensure that communication occurs in any direction between teachers and learners so as to facilitate the learning process (Eichenlaub,

2011). Numerous studies have reported that discussion, interaction, and reflection during the learning process provide positive learning outcomes in M-learning (Chao, Chen, 2009; Sharples et al., 2005).

While M-Learning is approached with different theoretical strategies to teach the English Language; there are common expectations of mobile devices in education. According to the survey conducted by Shon, students are expected to use mobile devices in the following areas: general communication, instruction, administration, and research (Shon, 2008). In this view, institutions have reported prioritized strategies in deploying the following mobile services: web presence, learning/course management service, library catalog and library services, student recruitment and admissions, and administrative services for student information. Other strategies to make learning through mobile technology effective is by ensuring that the right infrastructure as well as with human resources to adopt M-Learning and ensure mobile learning applications are in place. Additionally, developing mobile learning activities, instructional designers need to take special care in creating and managing a knowledge database including the vocabulary databases, reading materials, and learning materials, such as audio or video files. Also, accessibility and technical connection problems are the most important considerations (Park, 2011).

According to Kam (2013), mobile devices provide great opportunities to deliver course content and related teaching/learning activities. Students' responses to the survey also highlighted that they would value mobile applications that help in the coordination of students and learning resources, and also applications to improve pedagogical activities that are integral to the learning process. Thus, key strategies need to examine the adopted M-learning platforms which would

facilitate coordination of students and learning resources as well as enhance pedagogical activities integrated in the learning process.

In another study, Litchfield, Dyson, Lawrence, and Zmijewska (2007) reported that the majority of M-Learning projects have focused on improving interactivity in the classroom or increasing student access to learning materials 'anytime anywhere'. Studies further reported that effective learning happens when there is constant communication among the peers as well as between learner and teacher (Chao, Chen, 2009; Sharples et al., 2005). These communications can take place in the form of asking questions, receiving a response, peer discussion, and feedback. Thus, to make effective use of mobile technology for teaching and learning English, it is essential to evaluate the teaching strategies using the "Conversational Framework" to ascertain whether the M-technologies can support question-answer sessions as well as discussion and feedback among the peers or between the students and the teacher.

Joshi (2012) highlights some English vocabulary teaching strategies, such as word family, compound words, collocation, semantic map, affix, and context clue. The author argues that despite the significance of M-learning, a strategy needs to be there to ensure the use of semantic maps in language teaching and learning. There are two main purposes for teachers to use the semantic map in vocabulary teaching. First, the map strategy integrated into M-learning enables students to understand the specific content of the concept of the word. Second, the map strategy enhances students' vocabulary by using relevant words or examples (Shon, 2008).

Gitsaki, Matthew, Robby, Hamdan and Ben-Chabane (2012), recommend/advocate that teaching strategies in English should be in line with various processes involved in making content knowledge accessible anytime, anywhere at the learner's pace using a mobile device. Thus, the

following diagram illustrates where strategies need to focus in order to make the learning of English more effective.

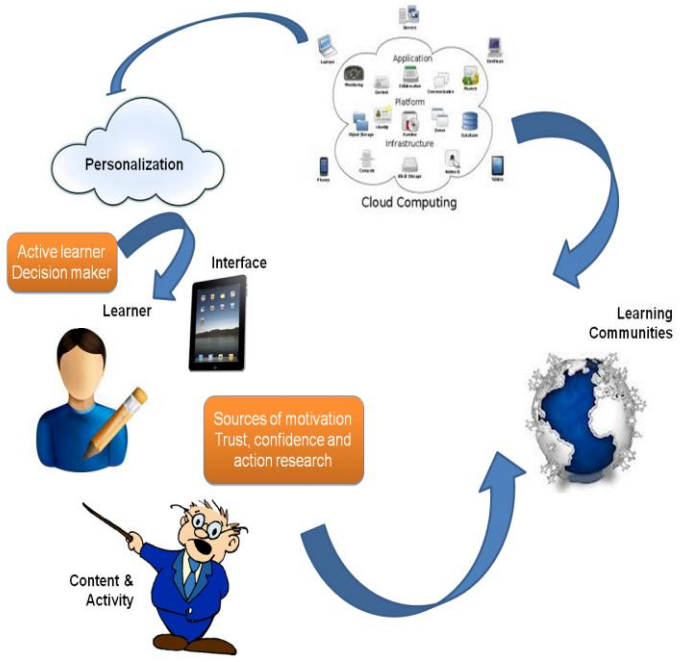


**Figure 5: Mobile Learning Approach (Gitsaki, et al 2012).**

- **Active Instructor**: The strategy here should ensure facilitation of learning inside and outside the classroom (Gitsaki, Matthew, Robby, Hamdan and Ben-Chabane, 2012). The active instructor strategy also ensures that students are engaged in the learning process, allows students to participate in designing their content and contributes to the design of learning assessment (Olney & Ferry, 2009).

- **Active learner**: The strategy here should ensure personalization of learning, access to content anytime, engagement with others in a collaborative environment, formulation of opinions, interaction with other learning communities, effective communication, and the sharing and publication of findings (Gitsaki, Matthew, Robby, Hamdan and Ben-Chabane, 2012).

- **Creative pedagogy**: The strategy here should ensure that both the instructor and the learners decide on what to learn and how it should be learned. The pedagogy promotes an inquiry and challenge-based learning model where teachers and students work together to learn about compelling issues, propose solutions to real problems, and take action (Gitsaki, Matthew, Robby, Hamdan and Ben-Chabane, 2012). This strategy asks students to reflect on their learning, on the impact of their actions and to publish their solutions to a worldwide audience (Cochran, Ben Halim, Khalil, & Gilroy, 2012).

- **Flexible curriculum**: The strategy here should ensure that a core curriculum of English is designed but the facilitator remains with the freedom to innovate and customize content according to or based on the aspiration of the learners. Flexible curriculum implies that the learners' knowledge of the material will come mainly from their investigation (of formal and informal content), and also from their creativity and collaboration with others (teamwork) (Kam, 2013).

- **Community outreach**: The strategy here should allow groups of students to formulate real-world context research questions, and connect students with their local learning and larger communities to find creative solutions to their language problems. The strategies of community outreach also create opportunities to connect students with international communities. These opportunities will foster students' social and leadership skills as they interact with the community in English (Joshi, 2012).

Kukulska-Hulme, Norris and Donohue (2014) further emphasized that M-learning influences the strategies employed by the language teacher as well as the processes in the 'language lesson' and the teacher-learner relationship. In their view, they emphasized the need for active participation in language teaching and learning. In the active participation, learners need to take responsibility

for their learning while teachers should have strategies for enabling the students to create and share multimodal texts. Active participation should also enable learners to communicate spontaneously with people anywhere in the world and capture language use outside the classroom. Active participation should assist learners to analyze their language production and learning needs; construct artifacts and share them with others; and provide evidence of progress gathered across a range of settings, in a variety of media (Kukulska-Hulme, Norris & Donohue, 2014).

Kukulska-Hulme, Norris and Donohue (2014) in their efforts to make English language learning and teaching more successful, developed a pedagogical framework to in which teachers need to think about how any new language learning activities, which they might design for their mobile learners need to be different from the prior planned or designed activities. Hence, teachers need to consider four dimensions: outcomes, inquiry, rehearsal, and reflection

- **Outcomes:** In this strategy, teachers need to ask themselves how the activity can lead to improved language proficiency. Some of the outcomes can be predicted, and other outcomes may just arise as a by-product of participating in a language learning activity or lesson. More important here is the teacher's sagacity of good judgment, which informs the 'design' of outcomes while openly anticipating outcomes that arise from the dynamic nature of language and contemporary communication channels and media. The mobile learning outcomes include the identification of gaps in knowledge; developing a habit of reflection on language learned; learning to notice how language is used, and connecting more expert and less expert language users. Additional outcomes entail using language for real purposes in real-world contexts; developing the ability to respond to a context; developing multiple perspectives; learning to learn

and developing autonomy, and developing digital (mobile) literacies (Kukulska-Hulme, Norris & Donohue, 2014).

- **Inquiry:** This element requires teachers to ask themselves how the learning activity relates to ever-changing contexts of language use. In this view, mobile devices should not only be regarded as tools for teaching and learning but also as instruments to help teachers and learners conduct inquiries into changes within disciplinary knowledge. Thus, a good strategy in adopting mobile devices for language learning or teaching should be reflected in these devices' ability to capture and share language data, such as new expressions or pronunciations that learners or teachers encounter (Kukulska-Hulme, Norris & Donohue, 2014).

- **Rehearsal:** This aspect requires English language teachers to ask themselves how the M-learning activity makes the most of circumstances and resources to enable more practice. Here, the mobile learning strategy should support a greater variety of language forms, including succinct forms of expression such as 'tweets' and summaries (Kukulska-Hulme, Norris & Donohue, 2014).

- **Reflection:** This element requires teachers of M-learning to ask themselves how the teaching activity design ensures reflection on learning. Here, teachers should be flexible and employ their teaching experience by using specific strategies that they know will work with their learners. As teachers enable the learning process, the mobile device should enable the learner to send feedback to the teacher. In developing learner's reflection, teachers should focus on what has and has not been learned or understood, how it may be applied, how to improve and progress, what new learning goals need to be set, and model good practices like correct language forms (Kukulska-Hulme, Norris & Donohue, 2014).

From the four strategic elements discussed, successful language lessons need to:

- Provide learners with timely feedback and scaffolding
- Enable learners to rehearse speech and writing, which can be particularly challenging in a classroom setting
- Encourage learners to develop skills in 'learning how to learn' and attend mindfully to the learning process
- Allow learners choices in what and how to learn
- Contribute to learners' sense of progress and achievement.
- Expose learners to language as a dynamic system
- Integrate the four skills of speaking, listening, reading and writing
- Incorporate tasks relating to learners' communicative needs within and beyond the classroom
- Give opportunities for learners to interact socially, negotiate meaning and produce varied and creative communication with peers and with English language users beyond the classroom across boundaries of time and place (Kukulska-Hulme, Norris & Donohue, 2014).

### 2.7.2 IPad and Teaching K-12 Students' Speaking Skills Strategies

The iPad, rich in digitally interactive applications, has a valuable role in the oral literacy classroom (Payne & Ross, 2005). The iPad applications entail the holistic aspects of learners' development; physical emotional and social and enhance children's learning opportunities by providing them with important new literacy skills (Payne & Whitney, 2002). The modern electronic gadget like the iPad makes people pocket-ready intelligent speakers. IPad technology exposes learners to situations where they can understand or produce language with the right expression (Falloon, 2013). The same scenes can be frequently re-played so that learners would identify themselves with corresponding events and practice with features of the electronic gadget.

However, students often face difficulties in mastering English because of a variety of cognitive and linguistic imbalances (Liu, Navarrete, Maradiegue & Wivagg, 2014). Thus, the use of an

iPad addresses some challenges thereby shifting pedagogical instructions from methods to hands-on experience. The mobile tools will enhance the teaching approach by making a new strategy for learning English more successful (Patten & Craig, 2007). The approach produces remarkable results if introduced to undergraduate students because of their critical approach to usage, for example, reading online information in a language classroom; electronic devices can ameliorate their performance. .

The teacher can also adopt the strategy of assigning a web-quest activity individually where the learner explores, discovers, solves puzzles, and finds the necessary information at once (Liu, Navarrete, Maradiegue & Wivagg, 2014). Technology-enriched material files related to language allow English learners to explore the language competitively any time. All the electronically based activities will scaffold learner's abilities to acquire the target language more efficiently (Liu, Navarrete, Maradiegue & Wivagg, 2014). Thus, learners' autonomy has to be ensured so as to facilitate learning. The learners' autonomy can be achieved by considering a pedagogical implementation of the curriculum. Any judicious expertise will understand working systematic nature of teaching plan. Therefore, the use of such handy gadgets reveals actual learning (Kumar, 2013).

Lys (2012) investigated the use and integration of iPads in an advanced German conversation class. The results of the study suggested that getting involved in real-time conversational activities through Face-Time is likely to be beneficial in helping improve oral proficiency among English learners of German language.

While comparing the students' recordings from the beginning and the end of English class, Lys (2012) noted that the oral language proficiency increased over only nine weeks across several dimensions. It implies that the time factor has a potential influence on the learning strategy that

teachers aim to use. The added conversation and recording time outside class with the iPad may not have been the sole reason for an increased proficiency, as the work accomplished in class should have been beneficial and probably complemented and guided the tasks outside of class. However, there are some studies that have demonstrated the potential of increasing language learning competency using real-time conversational exchange via text and speech (Payne & Ross, 2005; Payne & Whitney, 2002). The iPad practices were much better than the students' experience before. The iPad approach allowed the use of a strategy where additional practice is given to students, on average, up to thirty minutes a week. The strategy ensures that students engage in conversational practice with their peers.

In an attempt to have a successful learning outcome, the learning strategy should target and encourage the use of short, simple sentences (Magnum, 1988). Such a strategy is recommended because longer and more complex sentences with varied structure will tend to make the language production less fluent, and also more likely to be less accurate (Magnum, 1988). Language learning has been described as a product of rule formation and hypothesis testing. As learners try to integrate more sophisticated language, they may reject previously accepted language forms as part of the process of restructuring their evolving language competence. Therefore, a good learning strategy should not be a linear process. Instead, then strategy should give the learner a U-shaped learning behaviour, a phenomenon widely discussed among applied linguists, psychologists and cognitive scientists (Karmiloff-Smith, 1992; Siebert-Ott, 2000). However, sentence lengths and complexity were not always so obvious. Some of the learning samples can be very long, and the language learning outcome may vary depending on the task and the content. In this view, Siebert-Ott (2000) noted that it was easier for students to speak about themselves than to compare two countries. It implies that an effective learning strategy in the use of M-learning should evoke emotions among the students. Which emotions?

Falloon (2013) conducted a research study that focused on design features of apps and how they affect student learning. The purpose of the study was to determine how the design and content features of selected apps used on iPads affect the learning pathways of young students using them independently for problem-solving tasks (Falloon, 2013). The study revealed that the trend in education to jump from one technology fad to the next without appropriately addressing the actual learning capabilities of these technologies limited progress toward gains in student achievement (Falloon, 2013). Therefore, it can be argued that a good learning strategy needs to be in line with the technology's capability to deliver the right content that can evoke emotions for learning.

Falloon (2013) further recognized that the students' independent reading skills limited the importance of the text to speech capabilities of the apps as the five-year-old students in the study. "The text-to-speech greatly assisted them to understand what to do and once started, provided them with a means of accessing and using content that they struggled to grasp through text clues alone" (p. 513). When students failed to understand the directions or were unable to interact with the content, they became distracted and would leave the learning objective and engage in off-task activities . Thus, learning strategies in M-learning should entail clarity of content and context to develop learner's understanding and interaction with the learning platform. Also, Falloon (2013) suggested that the adoption of tangential needs to include app skimming –sampling apps without engaging with them; adopting 'hit and miss' cognitive strategies such as random guessing, or engaging in 'gamification.' Adopting such strategies implies turning apps into games by deliberately entering wrong information to see what happens (Falloon, 2013). With these strategies, students will be engaged for thoughtful learning (Falloon, 2013).

### 2.7.3. IPads and Teaching Listening Skills based on K-12 Learning Assumptions

One student group who may benefit from mobile devices, such as the iPod Touch, is English Language Learners (ELL) (Patten & Craig, 2007). Students appreciate and enjoy using the iPod touch for learning (Liu, Navarrete, Maradiegue & Wivagg, 2014). The students depend on the iPad device for real-time support with translator function and dictionary/thesaurus access (Liu, Navarrete, Maradiegue & Wivagg, 2014). The students prefer learning with the iPod helps as it facilitates listening to audio recordings for pronunciation and speaking in English (Liu, Navarrete, Maradiegue & Wivagg, 2014).

By providing the capacity for speaking, reading, and writing skills, the mobile devices can provide immediate listening acquisition for language learners (Patten & Craig, 2007). By engaging the language learner in situated tasks through mobile technology, "language can be used to amplify students' intellectual, aesthetic, and social identities" (Cummins, 2000, p. 544). Furthermore, the use of mobile devices like the iPod Touch can facilitate the academic language learning vital for success in school through the access of authentic, contextualized resources.

In the views of Croom (1998), listening is the most significant part of communication as it is pivotal in providing a substantial and meaningful response. In learning a language for communication purposes, listening plays a vital role. Listening helps the language learner to acquire pronunciation, word stress, vocabulary, and syntax and the comprehension of messages conveyed can be based solely on the tone of voice, pitch, and accent; and it is only possible when we listen. Without understanding input appropriately, learning simply cannot get any improvement. Also, without listening skill, no communication can be achieved (Flowerdew & Miller, 1996).

According to Yagang (1994), every study conducted regarding the language skills acquisition has proved that when we communicate, we gain 45% of language competence from listening, 30% from speaking, 15% from reading and 10% from writing. With the highest percentage of involvement in the exchange of information in effective communication, listening has to be considered a language skill of great consequence. Listening, unlike the other language skills, is perceived as more difficult by learners in comparison with the other language skills, as it includes all its interrelated sub-skills such as receiving, understanding, remembering, evaluating, and responding. However, with the advent of communicative language teaching and the focus on proficiency, the learning and teaching of listening started to receive more attention. However, listening is not yet fully integrated into the curriculum and needs to be given more attention in a language learning setting.

Renukadevi (2014) reports some listening strategies that have been formulated to match with every different listening situation and because of this, in teaching listening skills, the language learners are facilitated in adjusting their listening behavior to deal with a variety of situations, types of input, and listening purposes. Renukadevi (2014) asserted that listening strategies can be broadly classified as top-down strategies and bottom-up strategies.

In discussing top-down listening strategies, Higgins (1995) explains that *top-down strategies* are listener based. In these strategies, the listener relies on the background knowledge of the topic, the listening context, the text type, and the language and they help the listener to interpret the ideas he or she has listened to. Top-down strategies are for listening for the main idea, predicting, drawing inferences, and summarizing. On the other hand, *bottom-up strategies* are text based where the listeners use linguistic knowledge to understand information. Here the listener relies on the language in the message, that is, the combination of sounds, words, and

grammar to arrive at the final message. Bottom-up strategies are aimed to ensure that learners concentrate on specific details while listening, and recognize word-order patterns.

However, Mendelsohn (1998) argued that listening is not constrained either by top-down or bottom-up processing, but it should be an interactive, interpretive process where listeners apply both their prior knowledge and linguistic knowledge in understanding messages. Strategic listeners also use metacognitive strategies to plan, monitor, and evaluate their listening. Metacognitive development refers to conscious development in one's metacognitive abilities. The metacognitive abilities entail the move to greater knowledge, awareness and control of one's learning, selecting strategies, monitoring the progress of learning, correcting errors, analyzing the effectiveness of learning strategies, and changing learning behaviors and strategies when necessary (Ridley, Schutz, Glanz & Weinstein, 1992).

The use of metacognitive strategies activates the student's thinking and leads to improved performance in learning (Anderson, 2002). The metacognitive strategies train the language learner to cope with the demands of listening. It is evident that metacognitive strategies make their learning more effective; hence, they can maximize the information received and thus use this to improve their listening skills (Anderson, 2002).

Wenden (1998) asserted that learners who use their metacognitive abilities seem to have the following advantages over the others. First, the learners become more strategic. Their progress in

Learners have to build up a sense of responsibility for their work because craftsmanship comes through constant practice and they also have a sense of growing in the language.

More importantly, M-learning strategy needs to integrate features that can evoke feelings because language comes through emotional involvement rather than logical thinking (Guerrero,

Ochoa, Collazos & 2010). In this view, the iPad strategy should enable learners to share their emotions and experiences with their friends by imitating the language syntax of native speakers' sentence patterns (Guerrero, Ochoa, Collazos & 2010). The teacher should also create a platform for learners to record their voice, check pronunciation, and listen to native speaker feature audio files (Guerrero, Ochoa, Collazos & 2010). The teacher needs to help the learner by providing parallel lines of learning with self-exploration (Guerrero, Ochoa, Collazos & 2010).

### 2.8. M-Learning Role in Teaching Listening and Speaking in ME Contexts.

Al Dhanhani (2014) focused on using the iPad App –"Learn British English WordPower" with freshman students in a Taiwanese classroom. The study tried to investigate whether there is a difference in students' English vocabulary acquisition performances under different teaching instructions, such as using iPads or semantic maps. Therefore, the instructor used the iPad App and the semantic map method in two freshman English classes, respectively. The teaching of vocabulary lasted about 15 minutes each time. Students took the same English pre-test at the beginning of the semester and the same English post-test at the end of the semester. Also, a questionnaire about using the iPad App in the classroom was conducted in the class with iPad instruction at the end of the semester. Based on the above reasons, Al Dhanhani examined whether the iPad App enhances significant progress in students' English vocabulary acquisition. Based on students' attitude and needs, the study further examined whether ICT-based teaching increased students' learning motivation. The findings showed very positive results whereby the experimental group, who learned English vocabulary through the iPad instruction, performed better in the English post-test than the control group.

Wang, Teng and Chen (2012) studied the use of the iPad to facilitate English vocabulary learning in the Taiwanese classroom. The research explored students' attitude toward the use of ICT in

the classroom. According to the questionnaire results, students were more active in English vocabulary learning. Moreover, the students' attitude toward English was changed, and there were more students who wanted to learn English. The results of the research corresponded with previous research. Hence, the iPad App provided a meaningful learning interface in the traditional Taiwanese classroom. Instead of memorizing word by word, students got more chances to think and apply the words. Also, the learning responsibility was transferred from teacher to students. Moreover, students can download the App after class and review the lessons at any time, any place. It is like seamless learning, and if the teacher can use these kinds of ICT tools in the classroom, it can be beneficial for both teachers and students.

A study by Rockinson-Szapkiw, Holder, and Dunn (2011) compared the motivation of students for some learning tasks when using eBooks in comparison with traditional books. The authors found a significant difference in motivation between the groups. The students with eBooks had a significantly higher motivation to study the instructional material than the other group. Therefore, it is an open question if this increase of motivation is only a novelty effect or if the effect would be sustained over a longer period. Hence, the authors recommended only a longitudinal study to answer this question.

Weisberg (2011), in furthering the recommendations of Rockinson-Szapkiw, Holder and Dunn (2011) conducted a longitudinal study over two years in a business school. In this study, the use of 5 different devices for reading electronic books are analyzed and compared with a group using traditional textbooks. In the study, no significant difference regarding learning results is found. The study shows that the acceptance and usage of the devices as primary or secondary sources for learning has grown from the study because of the further development of the devices but also because of market penetration and prior experiences with these devices.

Another study focused on the effects of eBooks on literacy and especially reading skills (Korat, 2010). Here, Korat (2010) conducted studies on the effects of eBooks on word reading, story comprehension and the vocabulary of kindergarten children. From the results, the group that used eBook readers and eBooks showed significantly better results in an understanding of word meaning and word comprehension.

In a different study, Shamir, Korat, and Shlafer (2011) analyzed the impact of a tutor-supported use of eBooks versus individual usage on the writings skills of kindergarten children from families with a low socioeconomic status. The study showed that only a tutor supported scenario can lead to significant improvement of emergent word writing and phonological awareness.

Jones and Brown (2011) also analyzed the effects of electronic books on reading engagement of third-grade students. A traditional textbook, a website containing a collection of online books for children and an eBook were compared in the study. The study showed that the possibility to choose a book on the website had a positive effect on motivation and engagement of students. However, s no significant effects were found in the comprehension results of the book versus the electronic book.

Nie, Armellini, Witthaus and Barklamb (2011) focused on the effects of eBooks and eBook-readers on changing learning practices. In the study, the authors compared the use of an eBook-reader in a Masters program in occupational psychology and a Masters program for education. From the results, both groups reported an increased flexibility in their learning due to new learning contexts that occur through the portability of the devices. Learners could use small time-slots more effectively, and they developed new study strategies through notes, annotations and the preparation of assignments.

Kalz, Specht, and Oosterzee (2012) studied an ongoing pilot study at the law faculty of the Open University of the Netherlands. The students participating in a bridging course were given the choice between traditional study methods and the use of a tablet equipped with digital learning resources and electronic textbooks. A monthly questionnaire was administered to let the students to rate statements on a 7-point-likert-scale. The findings were further enriched with results from a focus group session. In cases where different colleges were using different sets of iPad applications in their program, comparisons were drawn between student groups and classrooms engaged in the use of these applications. The analysis showed that the level of use of iPads and specific applications positively changed with students' language development and improvement of skills, such as reading, writing, grammar, and vocabulary.

In the UAE program, the iPad was adopted as the platform because it has been shown to facilitate the desired pedagogy and learning environments (Dawson, Cavanaugh & Ritzhaupt, 2008). In assessing the impact of this technology in the UAE learning institutions, the authors noted that iPad engaged students in active, inquiry-based learning. The iPad technology further showed itself to be a critical element of sustained learning (Hargis et al., 2008).

Yee and Hargis (2012) showed that people display a wide range of assumptions about how intuitive technology has to be before it becomes a useful investment of time and mental energy. In this view, Mayberry and Hargis (2012) determined that using a device such as the iPod Touch, the faculty members can embed useful low threshold learning and engage in the meaningful scholarship of teaching and learning. Effective, meaningful teaching with mobile technology is underpinned by developing intersecting knowledge of teaching (Cavanaugh, Hargis, Munns & Kamali, 2012), the technology, and the content (TPCK) (Mayberry & Hargis, 2012).

Beauchamp and Hillier (2012) conducted research on three approaches in iPad language learning. These include the use of class sets of iPads retained in schools; the allocation of machines to individual students to use across lessons within the school; and a more personalized approach where students were given the device for the duration of the pilot could be used both in school and at home. Research data was drawn from initial (baseline) and exit surveys of parents and students. Additional data was obtained from interviews with the lead teachers and senior managers in each school; interviews with advisers and senior leaders in each of the Local Authorities; focus group meetings with students in each school, lesson observations by the research team; and teacher reflective journals and pupil video diairies . The study findings showed that the use of tablet devices, such as the iPad, facilitated the achievement of many of the core elements required within the Curriculum for Excellence framework and could be further developed to achieve these aspirations. The study also showed that the adoption of a personalized device, such as an iPad, significantly transforms access to and the use of technology in the classroom with many attendant benefits. Thus, the study viewed personal 'ownership' of the device as the single most important factor for successful use of this technology. The study further showed that individual possession and early familiarization with the iPad significantly contribute to teachers' buy-in and a lower level of resistance from teachers. The iPad device is bringing about significant changes in the way teachers approach their professional role as educators and is changing the way they see themselves and their pedagogy. Lastly, the study showed that parents appear to become more engaged with the school and their child's learning when the iPad travels home with the student.

In the U.K., Heinrich (2012) conducted a study that looked at the instruction of iPads into a large Academy for of 970 pupils for 11-18 years. Heinrich (2012) concluded that since the vast majority of pupils had iPads at the school, there was a significant and very positive impact on

learning as well as with further significant changes in pedagogy. Heinrich (2012) also noted that students were more motivated when using iPads, both staff and students found iPads easy to use, and the overwhelming majority of teachers regularly used iPads in their teaching.

In America, some studies, such as Pegrum, Howitt and Striepe (2013), Peluso (2012), and Carr (2012) examined the use of iPads by pre-service teachers in Australia in a variety of settings. From the observation the studies concurred with the idea that students can work anywhere in a classroom, in a school, or at home (Hutchison, Beschorner, and Schmidt-Crawford, 2012).

Lys (2012) investigated the use and integration of iPads in an advanced German conversation class. Lys was interested in analyzing how students learn with this new technology and how it affects the development of their oral proficiency level. Overall, the results suggested that iPads are well suited to practice listening and speaking at advanced levels, as learners were engaged in meaningful, purposeful, and goal-directed discourse. The learner-centered, task-based language learning approach using iPads facilitated interactions and provided scaffold assistance. On average, students spent twenty-four minutes a week in video conversations on Face-Time alone. Also, the required weekly recordings increased from a little over one minute at the beginning of the quarter to more than seven minutes for the last assignment. Although task complexity and linguistic complexity increased over the course of the quarter, students still felt comfortable and competent enough to produce longer speech samples.

AlNaqbi (2014) measured and analyzed the satisfaction of students using the smart phone/ tablet in virtual classrooms at Hamdan Bin Mohammed e-University. To this end, the author distributed an online survey to HBMeU learners. A total of 36 HBMeU learners responded to this survey that was distributed using learners' emails and the e-campus website. The researcher analyzed the collected primary data and concluded that generally speaking HBMeU learners’ are

satisfied with using smart phone/ tablets for accessing the virtual classes. The study revealed that 80.6% of the participations had used a smart phone/ tablet to access the virtual classroom. On the smart phones side, the highest rate was for the Galaxy (37.9%) while the iPad was used by (20.7%) of the learners and it was a higher rate than its competitor (the tablets). The research found that the Samsung Note is the best tablet for the virtual classroom, and the Galaxy is the best smart phone to be used in the virtual classes.

Hanadi and Al Suwaidi (2014) aimed to evaluate the effect of the use of iPads on the performance of students in Secondary Technical Schools (STS) while providing insights into the different pedagogical approaches that enhanced these performances. The study explored the use of iPads in STS schools, how iPads are part of the classroom environments and their impact on teaching and learning. The study compared the results before and after using iPads and provides some insights into students' and teachers' perceptions of the use of iPad. The qualitative and quantitative analysis of the same sample of studentsconcluded that the high achievers group was less affected by the introduction of iPads than the medium achievers or low achievers whose marks were different when using tablets It also appears that students' marks improved in nearly all the subjects when using iPads.

Al Dhanhani (2014) investigated the impact of iPad-based computerized games on student interest. The study employed a mixed qualitative-quantitative design approach. For the qualitative portion of the study, interviews were conducted with Kindergarten and Grade 1 teachers. For the quantitative portion of the study, a questionnaire was used to collect data regarding computer and game use, computerized games for the learning of English vocabulary, motivation variables, and overall perceived effectiveness. Finally, a small, pre-test-post-test study was conducted with 20 kindergarten level two learners to measure vocabulary retention

between iPad users and a control group. The results found a significant difference indicating that learners in the iPad condition were able to recall more English words than those in the control condition.

Hutchison, Beschorner, and Schmidt-Crawford (2012) conducted a study to determine the effectiveness of the iPad for literacy learning with elementary students. The researchers gathered information that would assist educators in making informed decisions in using mobile technology. They related the importance of integrating digital technology into literacy instruction to equip students with 21st-century literacy skills. They pointed out that many teachers acknowledge the need for reading, writing, and communication instruction in digital environments. The overall conclusion of the study indicated that the iPad was a viable tool for literacy instruction. Hutchison, Beschorner and Schmidt-Crawford (2012) found that using the iPads for literacy instruction supported not only student learning but also facilitated high students' engagement. Consequently, the students were able to demonstrate creative and unique ways of responding to text through a technology device that offers unique affordances to users (Hutchison, Beschorner, and Schmidt-Crawford, 2012, p. 23).

Hutchison, Beschorner and Schmidt-Crawford (2012) further indicated that there were three common themes in the students' learning experience. First, during the comprehension sequencing learning experience, the researchers observed that when students were allowed to create their graphic organizers after reading, their understanding improved, especially when compared with the same activity in a printed worksheet. Through such experience, the students could recognize how the visual component of a message complements the written text (Hutchison, Beschorner & Schmidt-Crawford, 2012). Second, when considering independent reading, the researchers found that although the students were highly motivated to read the

iBooks it was important for the teacher to carefully select books suited to their individual reading level to ensure the quality of the literacy learning experience. Third, the students were more likely to use the strategy of re-reading to revise their work when using the apps to practice the skill of visualization for comprehension (Hutchison, Beschorner, and Schmidt-Crawford, 2012).

## 2.9 Summary

It has rightly been argued by Joshi (2012) that learners today have direct access to information through technology and the Internet, which has enabled them to manage their own learning in informal settings. Students have changed from passive learners to truly engaged learners who are behaviorally, intellectually and emotionally involved in their learning tasks (Stockwell, 2008). This has transformed their image as mere "consumers of content" to the "producers and publishers.

Even if the spread of mobile devices is yet to achieve its greatest extent, varied devices such tablets, iPads, PDAs, etc. are finding their way into classrooms, in children's pockets, their homes, and being applauded for their perceived benefits. Incorporating these devices into the coursework framework, has emerged as a priority agenda for a majority of educational institutions. The establishment of STSs by the UAE government is proof enough of the acceptability and support for M-learning and its varied applications. It has become mandatory to ensure that educational practice can include these technologies in productive ways. These technologies also have the capability of creating new environments for learning such as "virtual communities".

Several models, such as the Conversational Framework Model, Pedagogical model, and the FRAME model, have been developed for explaining the interaction of several variables involved in the learning environment, learning process, and learning content. Further, the wide ranging

applications that are today available in M-learning, have demonstrated behaviorist, constructivist and collaborative perspectives of learning theory. These learning theories broadly explain how individuals acquire, organize and deploy skills and knowledge.

Irrespective of the way learning is acquired by the students, or in what kind of situation these variables interact among themselves and also with their external environment, there have been uncountable/many instances and studies that have clearly portrayed the M-learning techniques and devices as a win-win situation. There have been numerous studies, as discussed in this section, which have demonstrated the positive effects that M-learning has had on the achievements and performances of students, particularly inculcating characteristics such as collaboration, motivation, student engagements, the encouragement factor, etc.

However, there is still a long way to go for the advancement/development of applications, so as to embrace the adaptation of an increasing number of students from all kinds of academic backgrounds, and mental ability. There is an urgent need for applications that create effective learning environments which are learner-centered, knowledge-centered, assessment-centered and community-centered (Thinley et al., 2014).

Also, apart from the technological advances required, the successful implementation of M-learning requires a combined effort from the teachers as well as the students. The basic requirements, in order to achieve this are an active learner, an active instructor, a creative pedagogy, a flexible curriculum, and community outreach. Furthermore, given the varied adapting capabilities of different students, there must be a special focus on these applications and on developing the design and content features of models, to make them more suited for use on iPads. Ultimately, M-learning has been granted top priority given its vast effect on the learning

pathways of young students using it independently for problem-solving tasks, and academic enhancement.

# Chapter Three

## Methodology

“Knowing what you want to find out leads inexorably to the question of how you will get that information” (Miles & Huberman, 1984, p.42).

### 3.1. Introduction

Developing a methodology that suits the research objectives and addresses the research questions is one of the essential steps for the research to be successfully conducted. To decide on which methodology to select for conducting a certain study, the researcher should touch upon the research paradigm which is the "world view that defines, for its holder, the nature of the 'world', the individual's place in it and the range of possible relationships to that world" (Guba & Lincoln 1994, p.107). It is through the selection of the paradigm that the researcher is motivated and interested in conducting the study. Crotty (1998) states that the research paradigm is the "justification of our choice and the particular use of methodology and methods is something that reaches into the assumptions about reality that we bring to our work" (p.2).

To bring about the objective and research questions for this thesis study, which basically aims at evaluating the effectiveness of M-learning devices, the iPad in particular, in developing the learners’ oral performance and listening competence, their readiness and strategies for implementing such a device in their teaching and learning processes, a combination of qualitative and quantitative sequential explanatory mixed-methods approach has been conducted (Creswell 2011). Although the ontological and epistemological assumptions underlying this study are mainly based on the principles of social constructivism, resorting to the entailments of pragmatic perspectives (Morgan 2007) is sought to be beneficial to select the methods that suit the research questions. In this chapter, the philosophical ground on which the methodology is built, the study

design and the data collection and procedures as well as the sample and sampling strategies are thoroughly explicated.

### 3.2. Theoretical Underpinning

Understanding the philosophical underpinning is a crucial step not only to inform the research design but also to explain the approaches taken to support the credibility of research outcomes (Jackson 2013). In the same vein, determining the legitimacy of the research findings (Shenton 2004) is significantly introduced in the research approach as it is basically the cornerstone of any research. According to Morgan (2007) there are four prominent features to be considered in a research approach: the epistemology which informs the research, the philosophical stance or the paradigm (e.g. post-positivism, interpretivism, pragmatism, and advocacy/participatory), and the methodology and the procedures used to collect data. According to many authoritative authors in research methods i.e. (Creswell 2011; Denzin & Lincoln 2005; Merriam 2009; Tashakkori & Teddlie 2003), there are three main research approaches: qualitative, quantitative and mixed methods. Every research approach stems from a different philosophical perspective (e.g. post-positivist, interpretivist and critical theory). Denzin and Lincoln (2005) describe qualitative research as an activity that positions the observer in the world. It makes the world visible through a set of interpretive, material practices. These practices convert the world into sets of representations, field notes, conversation interviews, recordings and portrayals to the self. They further explain that "qualitative research involves an interpretive, naturalistic approach to the world… attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them "(p.3). The fundamental assumption of this approach is the presence of multiple "truths".

Conversely, from a post-positivist perspective, a quantitative research approach stems from the idea that there is a single 'truth' apart from human perceptions (Lincoln & Guba 1985), and the only way to explore this truth is by quantifying and measuring the factors that affect the human perceptions. The approach in quantitative research is described by Trochim and Land (1982) "as the glue that holds the research project together" (p.1). They further explain that the design is the structure of the research which shows how the samples, measures, treatments or interventions, and methods work together to address the main research questions.

Due to the drawbacks of both quantitative and qualitative approaches, the researcher opted to conduct a mixed-methods approach. The debate between qualitative versus quantitative approaches has concurred with the rapid increase of mixed-methods to bridge the gaps in addressing the research questions. According to Creswell and Plano Clark (2007), there are three types of mixed-method design: triangulation design, embedded design and explanatory design. The triangulation design is chosen when the researcher wants to compare and contrast the findings of the qualitative and the quantitative approach whilst, the embedded design is used when the data sets are supportive of each other. That means the quantitative data sets are meaningless if they are not strictly supported by open-ended questions. The explanatory design is used when the quantitative data from a certain research are meaningfully explained by the qualitative ones.

The central principle of using a mixed-methods research approach is based on the idea that the data obtained should be multivariate in strategies and methods in ways that reflect the corresponding strengths and non-overlapping pitfalls which cannot be obtained by either the qualitative or the quantitative research methods (Johnson & Turner 2003). In other words, the mixed methods approach allows for the “opportunity to compensate for inherent method

weaknesses, capitalize on inherent method strengths, and offset inevitable method biases" (Greene, 2007, p. xiii).

In the context of using the iPad as an M-learning device in teaching the two skills of listening and speaking; its applications and the users' readiness for and perceptions of its implementation, the mixed methods approach is the most appropriate for conducting this thesis study. The rationale for selecting a mixed-methods approach is the nature of the objective of the research. Investigating the effectiveness of the iPad in developing the learners' oral and listening skills in vocational education, specifically in Secondary Technical Schools in UAE, necessitates a comprehensive research approach which covers all the elements as well as the aspects of strategies, practices and readiness for implementation. Espousing the social constructivist frame to conduct this thesis study along with opting for pragmatic perspectives is conducive to success in achieving the research objectives.

There have to be concordances between social constructivist principles and the pragmatic perspectives in order to decide a feasible methodology to evaluate the effectiveness of M-learning devices on the development of learners' oral performance and listening competence. This congenial combination is essential to pave the way for data collection tools and data analysis afterwards. One of the focal social constructivist principles is that it is a holistic approach (Vygotsky1987) which means that the individuals and their understanding are inseparable entities. Vygotsky (1978) concludes during his observation of children in their problem solving session that "the most significant moment in the course of intellectual development, which gives birth to purely human forms of practical and abstract intelligence, occurs when speech and practical activity, two previously completely independent lines of development, converge" (p.24). In this sense, investigating the strategies and the practices while

implementing M-learning devices is nested in the social constructivist principles. Thus, developing digital pedagogies 'ipedagogies' (Downs, et al. 2011) or strategies to cope with the millennial generation's ways of making meaning can be studied within a social constructivist frame. Therefore, depending on the theoretical framework and the model adopted from Koole (2009), explaining and analysing the interrelationships between mind and matter (Vygotsky 1978) goes through a dialectical approach, which according to Vygotsky is fundamental in human development. The previously explained triangular relationships between learner aspect, device aspect and social aspect informs the strategies that learners use, the practices that social aspects present and the applications that device contains to develop learners' oral performance and listening competence.

From pragmatic perspectives, investigating the aforementioned aspects relationships requires the researcher to make use of every possible research method to achieve his/her goals. It has been asserted that the pragmatic approach emerged as a response to the forced choices between scientific and naturalistic approaches in conducting research studies (Creswell, 2003; Greene et al, 1989; Johnson and Onwuegbuzie, 2004). Hence, opting to combine the quantitative method as a positivistic approach and the qualitative method as an interpretivist approach is decisive in this thesis study.

Pragmatism as a paradigm resorted to for sorting out the debate between the existing paradigms "paradigms war" (positivism, post positivism, constructivism or occasionally interpretivism) is the paradigm that circumvents the controversial issues of reality and truth, and which acknowledges, philosophically, that there are multiple and single realities which are open for empirical inquiry. It orients itself towards solving practical problems in the 'real world' (Dewey 1925; Creswell & Plano Clark 2007; Rorty 1999). By and large, pragmatism extricates the

researchers from practical and mental constraints which are imposed by the ‘‘forced choice dichotomy between post-positivism and constructivism’’ (Creswell & Plano Clark, 2007, p.27), so they do not have to ‘‘be the prisoner of a particular method or technique’’ (Robson, 1993, p.291). The proponents of using mixed methods in research design (Creswell 2003; Tashakkori & Teddlie 1998) view the pragmatic paradigm as the intuitive call to study areas of interest and choose methods that are feasible, and make use of the findings congruently with qualitative and quantitative approaches. Since the research approach stems from the notion of “fitness for purpose” (Cohen et al. 2000), this approach will follow an explanatory mixed-methods approach.

### 3.3. Study Approach

In the last decade, many qualitative and quantitative research studies have investigated the use of M-learning in education. However, most of these studies focus on the learners’ engagement, perception of and attitude towards M-learning (Al-Fahad 2009; Bottentuit Junior 2008; Cavus & Ibrahim 2009; Cavus & Uzunboylu 2009; Clarke et al 2008; Garrett & Jackson 2006; Guenter et al 2008; Hsu, Wang, & Comac 2008). As to achievement, generally investigated by conducting quantitative studies (Rogers, et al 2010; Shih, et al 2010; Wyatt, et al 2010; Wyatt, et al 2010), most of these studies reported positive results. In addition, few studies have investigated the prior knowledge and current use of M-learning in teaching and learning (Bottentuit Junior & Coutinho 2008). It can be confirmed that only a small number of research projects have investigated the strategies and the practices within a social constructivist framework (Huber 2012; Koole 2006; Koole 2009; Sharples. et al 2007). Hence, this thesis study bridges the gap in the actual implementation of M-learning specifically in vocational education. On the other hand it highlights the application of iPads in developing the learner’s oral performance and listening competence.

Adopting the mixed methods approach, as mentioned above, espouses social constructivism and pragmatism to achieve the research objective. The succinct conformity between the qualitative and quantitative research methods informs the research methods and the research instrument as well. As a sequential mixed methods approach, there should be harmonious research instrument selection by which the instruments explain or explore their findings. For example, opting to initiate the research study with a quantitative instrument then followed by a qualitative one, the latter will sequentially explain the findings of the former. Whereas commencing a study with a qualitative research instrument then followed by a quantitative one will allow for an exploration of the qualitative data sets. In the coming section, a presentation of the selected research methods is introduced with a "thick description" (Merriam 2009) of these instruments and the way they are sequentially presented in the study.

### 3.4. Methods

As has been mentioned earlier, this thesis study is designed as a sequential explanatory mixed methods study. In this sense, it is started using a quantitative method and then followed by qualitative ones; nevertheless, the greater part is devoted to the qualitative method. The adapted methods are focus groups interviews (Appendix A), students' questionnaire (Appendix B), field note participant observation (Appendix C) and semi-structured interview (Appendix D). In the first phase, the focus group interview and the students' questionnaire are administered nearly concurrently though the data obtained from the focus groups help in developing part of the questionnaire's questions. The data sets obtained from the previously introduced methods inform the procedures and the content of the other two methods which are the field notes participant observation and the semi-structured interviews.

### 3.4.1. Focus Group

Being one of the research tools that can "examine naturalistic discourse for thematic content" (Denzin & Lincoln 2013, p.465), focus groups can be used as a single method or in combination with other methods such as observation, questionnaires and interviews (Barbour 2007; Bloor et al. 2001; Lunt & Livingstone 1996). Morgan cited in Flick (2002) asserts that focus groups are useful for "developing interviews schedule and questionnaires"(p.120). He further contends that focus groups are not only orienting the researcher to his\her new research field but they are also used to generate the research hypothesis based on the insights of the informants. According to Morgan (1997) there are 'rules of thumb' while deciding on focus groups as a research method whether it is used as a fundamental research method or as a bridge to form another research method. According to these rules of thumb, any focus groups research project should "a) use homogeneous strangers as participants, b) rely on a relatively structured interview with high moderator involvement, c) have 6 to 10 participants per group, and d) have a total of three to five groups per project" ( Morgan 1997b, p.5). In spite of the last rule, the researcher decided to conduct two focus groups sessions only due to the small number of the targeted population who are teachers of English, Curriculum Development Unit (CDU) and Master Power Users (MPU) in the institution (ADVETI).

The uniqueness of focus groups as a qualitative research method is that it can account for the interactions, which are considered from a social constructivist perspective, as representations of reality (Demant, 2012).Thus the observed interactions between the interviewees as a group can confirm that the obtained data are reliable and a valid source of information. However, some critics claim that focus groups as a research instrument have two drawbacks. One thing is that, since the discussion might be controlled only by the researcher, this will result in unnatural data (Barbour and Kitzinger 1999; Litosseliti 2003). Secondly, the researcher's lack of neutrality

might lead to bias and misinterpretation of the subjective opinions of the interviewees while reporting the data (Krueger and Casey 2000; Morgan 1997). To avoid these two defects, the researcher limits his/her role in the discussion as a moderator to control the process of turn taking only. Furthermore, while interpreting and reporting the data, the researcher is assisted by three other researchers who are experts in interpreting qualitative data sets by applying the process of inter-rater reliability or moderation to ensure that data analysis is rigorous.

There were two focus group sessions. One is conducted with the teachers who teach the selected sample of the students (eleven graders) and the other one comprises the expert teachers, those who taught the same grade for more than three years using the iPads as M-learning devices, the Master Power Users (MPU) or the teacher trainers and the subject specialist. The two focus groups sessions were conducted in two different STS sites namely Ajman and Al Ain. The rationale for selecting these two groups is that the first group includes only the teachers who teach the targeted samples of the students to maintain one unit of discussion. In this sense, the selected sample discussed how iPads are used in a quadripartite interaction mode namely: teacher-learner, teacher-device, learner-teacher and learner-device which is illustrated in the Figure1 below.

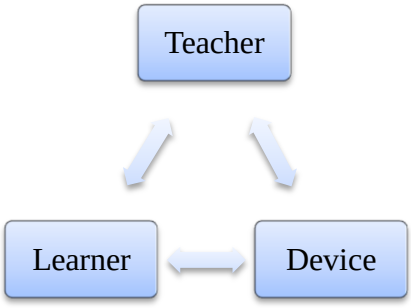


**Figure 6: Focus Group Discussion Domains**

In the figure above, the discussed interaction domains signaled the theoretical framework by which the data will be analysed afterwards. Whereas the issues discussed in the second group which includes the expert teachers, the subject specialist and the MPU mainly tackled the iPad implementation from different perspectives. The second focus groups session discussed the iPads' application, ICT infrastructure of the study sites and the training for its implementation. Moreover, from a different angle, group homogeneity sought to render more in-depth understanding to the discussed issue. Morgan (2009) argues that the effectiveness of group homogeneity in which he refers to the process of forming the group is segmentation. He confirms that "segmented samples are closely tied to the emphasis on homogeneity in the composition of focus groups. It is this homogeneity that not only allows for more free-flowing conversations among participants within groups but also facilitates analyses that examine differences in perspective between groups" (p.7). The focus groups issues discussed are explained more in the piloting section below while the sample size and sampling strategy is introduced in the samples and sampling strategies section below.

### 3.4.2. Questionnaire

Having finished the focus groups, the data obtained help in redesigning and developing the questions that compose the questionnaire which is already adapted from previous studies (Al-Fahad 2009; Kafyulilo & Fisser 2011; Khaddage & Knezek 2013; Pollara 2011; Yang 2012). In spite of having acquired an ambivalent reputation as a research tool, designing a questionnaire can be very useful yet takes considerable effort (Brinkman, et al 2007). Although the questionnaire, as a quantitative research method, is popular for providing a 'quick fix' for research methodology, still it lacks solidity when used alone as Gillham (2007) asserts. However, it is useful "when used in tandem with other methods"(p.2). He argues that if the results of using a mixed method approach converge, then greater confidence in the findings will be obtained.

Brinkman's (2009) conventions of designing, formulating and administering the questionnaire are applied in this thesis study. If the sample size is very large, it is preferable not to opt for open-end questions while constructing the questions in the questionnaires (Brinkman 2009). Although the samples and sampling strategies are discussed hereafter, the following Figure2 summarizes the concordances between sample sizes and the type of question i.e. open-end or structured questions.

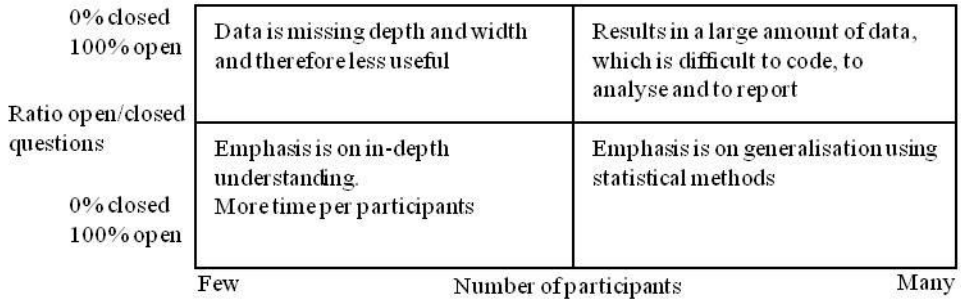


**Figure 7: Question type versus sample size matrix (Brinkman 1997, p.4).**

As can be noticed from the figure above, there should be a harmony between the sample size and the kind of questions offered to obtain data. Brinkman (2009) stresses the use of streamlined construct 'questions' yet "instead of aiming for in-depth understanding, with closed-questions the focus is on systematically summarizing the data and if possible trying to generalize it to the population at large" (p.4). Thus, the questionnaire's constructs were designed as structured questions to facilitate the participants' choices. On the other hand it allows for generalisability.

As indicated above, according to Brinkman's (2009) conventions, the questionnaire starts with an orientation/introduction in which the researcher introduced the aim of the study and informed the participants that their participation is voluntary and there will be no harm if they decided at any stage to withdraw from the study. The demographic factors are not accounted for here in this thesis study so they are not indicated at all. The reason for not including the demographic factor

is that it is out of the scope of the study and it does not factor to the effectiveness of the device (iPad) implementation. The questionnaire is divided into four main parts, two of which are devoted to the participants' readiness for and perceptions of using iPads in their teaching and learning context, whereas the third part is allocated to iPad implementation, specifically for the two skills of listening and speaking. The last part is added by the reviewers to give a space for those participants who want to jot down issues or concerns that are not indicated in the questionnaire. The measuring statements are articulated in the figure below to indicate the readiness for and the perceptions of the participants in the first two parts of the questionnaire on a five point Likert scale graded from 1 to 5 where 1 is strongly agree, 2 agree, 3 not sure, 4 disagree and 5 strongly disagree. As for part three, it also follows the same Likert scale but the measuring points are modified to suit the statements where 1 is usually, 2 sometimes, 3 not very often, 4 rarely and 5 never.

| **Item** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| **One and two** | Strongly Agree | Agree | Not sure | Disagree | Strongly disagree |
| **Three** | Usually | Sometimes | Not very often | Rarely | Never |

**Table 1: The format of the questionnaire**

### 3.4.3. Semi-Structured Interviews

Nested in phenomenological approaches in qualitative naturalistic inquiry, semi-structured interview "seeks to obtain descriptions of the interviewee's lived world with respect to interpretation of the meaning of the described phenomena"(Kvale & Brinkmann 2009, p.27).

Situated in the centre of the continuum between questionnaire and open-ended interview, the semi-structured interview is based on specific techniques and focuses on certain themes. Since the researcher conducted the interviews himself, it rendered high quality data as this kind of interviewing can reveal verbal and nonverbal clues which if described thoroughly yield rich data from the informants. One of the merits of semi-structured interviews over other kinds of interviews is the mutual dependability with participant observations (Kvale & Brinkmann 2009). In addition, semi-structured interviews assume reference framed relations between the interviewer and the interviewees whereas in open-ended interviews it is the aim of the researcher to find out the frame of the interviewees (Drever 2003; Kvale 1996).

Interviewing people in general is a multipurpose research method. It can be used for either collecting data about the respondents' attitudes, experiences and perceptions or gathering data about the informants' background or prior knowledge about the issue investigated. Considering the different types of interviews, although they are placed in a continuum of structure extending from unstructured (open-end) to highly structured, each type has its own benefits depending on the nature of the research questions or objectives (Harrell & Bradley 2009). This means that the amount of control of the interviewer in the course of interviewing process is called more or the less structured. As far as the amount of control over the structure of the interview is concerned, Harrell and Bradley (2009) assert that "semi-structured interviews are often used when the researcher wants to delve deeply into a topic and to understand thoroughly the answers provided" (p.27).

In this thesis study, the researcher seeks to extrapolate the meaning from the respondents based on their understanding of the investigated phenomena which is iPad implementation within the domain of English and vocational education. Taking this into consideration, the analysis

afterwards follows the same social constructivist framework as social constructivism assumes that reality, knowledge and learning are based on social interaction. Reality, from social constructivist perspectives, is socially invented through human activity and it is not there prior to this activity (Kukla 2000). Knowledge, in the same vein, means the socially and cultural interactions between the members of a society and their environment (Ernest 1999; Gredler 1997; Prat & Floden 1994). Moreover, learning is a social process and it happens meaningfully once "individuals are engaged in social activities" (Kim 2001, p.7). Therefore, it is clear that the semi-structured interviews is chosen due to the nature of the thesis in which the main aim is to elicit the meaning of how iPads as M-learning devices can help develop the vocational learners' oral and listening skills.

### 3.4.4. Participant Observation

Building on the pragmatism perspectives, utilizing the fourth research method, participant observation, is central to the process of gaining reliable data that can help in answering the research questions. As qualitative research is not only concerned with objectively measurable 'facts', but also with how people construct, view and interpret meanings out of their experiences in social contexts (Gerson & Horowitz 2002), participant observation is considered one of the prominent methods in qualitative studies. It is defined by Denzin (1989) as "a field strategy that simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation, and introspection" (p.157-8). Nested in ethnographic research methods, observation, as Fetterman (1998) asserts, "combines participation in the lives of the people being studied with maintenance of a professional distance that allows adequate observation and recording of data" (pp.34-35). Thus, it necessitates a full immersion from the research in the research context to enable him to internalize the perceptions and the beliefs of the participants of the studied issue (Fraenkel, et al. 2012). In the thesis, the issue under investigating

is iPad implementation to develop speaking and listening skills. Therefore, a suitable type of observation should meet certain requirements to obtain the kind of data needed for evaluating the effectiveness of implanting such an M-learning device. Based on these specificities or requirements, covert participant observation was used.

According to Spradley (1980), there are three phases of participant observation: descriptive observation which gives an orientation for the researcher, focused observation in which the researcher concentrates on answering the research questions and selective observation where the researcher looks for evidence and practices to support the second phase. In this thesis, these three phases were applied. In the first phase, the researcher visited the sites where he intended to conduct the study (three STS campuses namely: Ajman, Abu Dhabi and Al Ain) to become familiarized with them. In the second phase, the researcher assigned the intervals of the observations for each site which will be explained further in the sampling section in this chapter. Nevertheless, the selective observation was conducted during the initial data analysis phase in order to ascertain and obtain the needed data sets. In the last two stages, the researcher immerses himself into the context of the study to be close to the participants and to obtain data sets in their naturalistic context.

Central to the immersion of the researcher in the context of the study, observations took the form of covert rather than overt as described by Fraenkel, et al. (2012). For researcher to obtain a natural occurring perceptions or understanding of the studied issue, he worked closely to the setting of the study. What distinguishes the participant observation and gives it privilege is that it “develop[s] a holistic understanding of the phenomena under study that is as objective and accurate as possible given the limitations of the method" ( DeWalt & DeWalt 2002, p.92). From a different angle, what is considered a deficit in utilizing participant observation as a research

method to obtain valid data is the necessity of recording more behaviour than can be done accurately. To overcome this obstacle, Fraenkel,et al. (2012) confirm that “as is frequently the case, the simpler the instrument, the better. Therefore, the instrument used was only a simple tool that enables an immediate recording of the activities and direct reflections upon these activities. The observation form is basically consists of three fields: the activity field in the researcher indicates whether the activity is speaking or listening and how far is it in accord with one of the three chosen theories in the theoretical framework, the description field where the researcher describes the kind of activity and the interaction taking place and if these kind of activities are best completed with or without the use of iPads, the reflection field where the researcher jots down his immediate reflections upon the observed activity. To facilitate the processes of taking these notes and observing properly and instantly, a series of key acronyms were developed by the researcher see (Appendix D).

Describing the four data collection tools, their suitable designs and the way they are utilised in the research study, the way samples are recruited and the strategy of selecting those samples is presented herein. As sampling is central to the processes of obtain the needed data based on certain decisions, the samples need to be presented and how these samples from each research method are selected and based on which criteria.

### 3.5. Samples and Sampling Strategy

Using different research methods, samples are varied from one method to the other. However, the sampling strategies are purposeful ones in which the researcher pragmatically selects the suitable samples that suit the objective of the study. According to Creswell (2012) purposeful sampling is the intentional selection of the samples and the sites "to learn or understand the central phenomenon" (p.207). This sampling strategy is explained as "information rich" (Patton,

1990, p. 169) where the researcher can understand the investigated phenomenon in-depth. There are different kinds of purposeful sampling strategies which the researcher might use before the data collection started or after data collection has begun depending on their intentions (Creswell 2012). Two of the purposeful sampling strategies, which were differentiated in the literature based on their intentions, are the maximal variation sampling in which the researcher defines (sites or individuals) before the sample selection, and the confirming and disconfirming sampling, in which the researcher identifies the characteristics of the samples during the data collection process (Cresswell 2012; Miles & Huberman 1994; Patton 1990).

Sampling is central to the success of the focus group. Unless there is background homogeneity amongst the focus groups members as well as each participant bearing the required characteristics, the discussion might deviate from the intended data or lose its representativeness (Cohen, Manion and Morrison 2002). As for the focus groups samples, there were two focus group interviews each of which consists of 8 members N=16. The samples are five females and three males who are representative samples of the population. The most effective sample size of the focus groups participants is from 6 to 15 participants (Cohen, Manion and Morrison 2002; Kitzinger 1995; Morgan 2007). The rationale for this sample size as indicated by Morgan (2007) is that if the sample size is very large the moderator will lose control and the interaction might deviate from the research objectives, and some members might not participate effectively. Conversely, if the sample size is small, it may not represent the actual behaviours of the intended population of the study. Thus, the sample selection was in line with the defined criteria. Based on Cohen, Manion and Morrison's (2002) understanding, "focus groups are contrived settings, bringing together a specifically chosen sector of the population to discuss a particular given theme or topic, where the interaction with the group leads to data and outcomes" (p.288), maintaining the homogeneity of the discussion group and the unfamiliarity of each other

rendered more insight from them. Psychologically, being strangers from each other, the participant will feel free to give their opinions as far as they share the same background. This is confirmed by Cohen, Manion and Morrison (2002) considering "focus groups operate more successfully if they are composed of relative strangers rather than friends" (p. 289).

The samples of the first focus groups were selected based on the criteria of teaching the same core curriculum, utilizing iPads in their instructions and teaching the intended learners, who are eleven graders. They consist of four males and four females basically six of them were non Arab English teachers as the institution goes for recruiting them to enhance the learners' oral and listening competence. Four of the non Arab teachers were females, while the other two were bilingual male teachers. They convene at the conference room in Ajman after they attended a workshop that was held by ADVETI in which the attendance was mandatory across the board. The researcher makes use of this gathering and manages to put together the previously emailed teachers and those who show interest in conducting the focus group session. The researcher himself was the moderator of this focus group interview. As per the second focus groups session, it was held in Al Ain. The samples were eight participants distributed as follows: two were male teachers' trainers or Master Power Users (MPU), one subject specialist and five teachers who are randomly selected yet still they are teaching in the same institution and using the iPads as tools for instruction. The session was held in the staff room and moderated by the head of English department who is an Arab English teacher. All the other five teachers were non Arab English teachers. Figure: 7 below demonstrate the participants chart. The procedures for conducting these two focus group sessions will be explained more in the procedures section in this chapter.

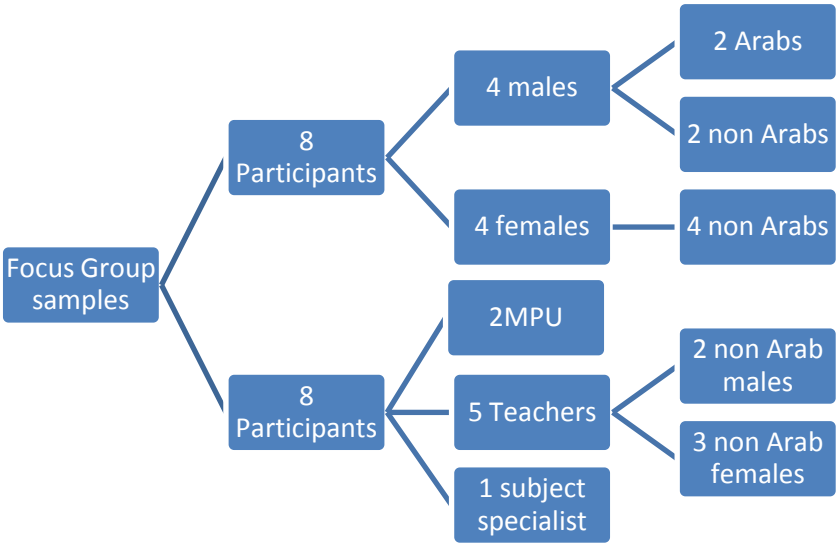


**Figure 8: Distribution of the Focus Group participants**

Concerning the samples and the sampling strategy of the questionnaire, the samples were the students of STS Ajman, Al Ain and Abu Dhabi. The total population of the three STS campuses is 700 students. The selected participants are the male students only. This sampling strategy lends itself to purposeful sampling. Based on the definition of purposeful sampling, there need to be predetermined characteristics as well as criteria for deciding on this sampling technique (Cresswell & Plano Clark 2011; Patton 2002; McLeod 2014). Moreover, Morse and Niehaus (2009) assert that there should be a consistency between the aims of the study and the selected sampling strategy. Taking this into consideration, the researcher selects the male students of the three campuses since they are the intended participants who use iPads. They spend two years and more in the institution and are accessible to the researcher. Although accessibility is a term nested in the convenient sampling, it is used here in purposeful sampling due to cultural constraints of accessing the female campuses. As the questionnaire is one of the used methods in this thesis study and for the purpose of integrating the other methods i.e. focus groups, semi-structured interviews and participant observation, it limits the scope of the study to male participants only. As for the samples to be representative, the questionnaire is distributed to 500

students from the three campuses. The returned number is 274 questionnaires, that number is considered to be representative of the abovementioned population. Regarding the design of the questionnaire, it is discussed thoroughly in the piloting section in this chapter.

Due to the specificity of the study, which is evaluating the effectiveness of iPads as mobile learning devices in the development of the oral and listening skills of the STS students, the researcher identifies the characteristics of the students before conducting the study. The students are male eleven graders. The rationale for this sample selection is mainly because these students have spent more than two year in the program (iPad implementation) which will help give more insight into the effectiveness of the program. Their age is ranged between 16 and 18 and they are homogenous in terms of their sociocultural, economic and linguistic background. As for their sociocultural homogeneity, they are all local (Emiratis) and share the same culture. Although there are some differences in the students' economic background, still the discrepancies between them is not worth mentioning. Since there is an entrance exam for the students who want to join the STS, it is assumed that they share mostly the same linguistic background as they all come from grade nine government schools.

Concerning the samples and the sampling strategies of the semi-structured interviews, there are 10 interviews. Purposeful sampling is the strategy followed here in the semi-structured interviews as well. Of the 10 selected for the sample, six are non-Arab teachers, chosen purposefully because they are currently teaching eleventh graders. The rest are one female and three male Arab teachers In the case of the non-Arabs, two females and four males were chosen in order to be representative of the population of the study. The interviews took place to coincide with the end of year workshops that were held in both Dubai and Al Ain campuses. The interviewees were selected and talked to at the first workshop gathering which was held in Al

Ain. To allow for anticipated withdrawals, the researcher assigned more than the needed informants in order to reach the targeted sample. Thus of the 18 teachers who initially agreed to be interviewed 10 teachers were eventually interviewed. The rationale behind this procedure is the anticipated absence of some of the assigned interviewees. A full description of the site and the protocols of the interviews are explained thoroughly in the two sections of data collection procedure and piloting of the study.

Having introduced the research instruments that have been utilized in the study, there should be a thick description of the procedures that demonstrate the way these instruments are implemented. The rationale of conducting these methods; how and when they are administered including the selection of suitable sites are discussed in the following section.

### 3.2.3. Data collection procedures

To best address the research questions as mixed methods, the current study incorporates different research tools: focus group, participant observations, questionnaire and semi-structured interviews. First, the researcher conducted a focus group with the teachers in conjunction with the questionnaire to pave the way for the designation of the later research tools. Being a sequential explanatory mixed methods study necessitates starting with the quantitative research methods then followed by the qualitative ones (Creswell 2011) . In this thesis, there is only one quantitative research tool with the rest being qualitative. The following table summarizes the research questions and the suitable research instruments along with the data analysis procedures for each one.

| Research Tools | R.Qs | Rationale, purpose | Data analysis |
|---|---|---|---|
| **Focus group** | 1,4 | To investigate students and teachers readiness for iPad implementation and to explore the iPad teaching strategies. | Qualitative interpretation |
| **Questionnaire** | 1, 2, 3 | To investigate students as well as teachers readiness, usage and the implementation strategies of the iPads. | Quantitative descriptive statistics |
| **Interviews** | 1, 2, 3 | To investigate students' as well as teachers readiness, usage and implementation strategies of the iPads. | Qualitative interpretation |
| **Observations** | 2,3, 4 | To investigate the role of the iPad as a teaching tool and its impact on developing oral and listening skills. | Qualitative and quantitative interpretation |

**Table 2: The purpose for research tools selection rationale and analysis**

Concerning the questionnaire, since there are around 800 male students in STS across the board, 500 questionnaires were distributed to make sure that the returned number is representative of the population of the study. The returned number of the questionnaires was 274 (N=274) which means more than 50% of the distributed questionnaires were returned which is representative in this case as all the respondents in the returned questionnaires were having the same characteristics of those in the targeted population. Has the formal approval been obtained, the questionnaires were sent to the targeted campuses to obtain the needed data. Reading the introduction at the beginning of the questionnaire in which the researcher explains the objective

of the thesis study and the purposes of conducting such study to the respondents, it was made clear that their participation is voluntary and that they have the right not to participate or to withdraw before they complete the questionnaires. They were also assured that there is no demographic information needed so they can express their opinions clearly and freely. Accepting to participate in this questionnaire is considered formalized when signed informed consents from the respondents are returned.

The process of collecting back the questionnaires took three weeks during which the researcher maintains channels of correspondence among the three targeted campuses to make sure that most of the questionnaires were filled properly, bias free and non-counterfeited. To make sure that these procedures were strictly conducted, the researcher corresponds with the team leaders to insure that 1) students filled the questionnaires by themselves 2) they do not copy fraudulently from each other 3) they have the full freedom to express their opinions whether they are negative or positive. To make sure that the time spent in filling in the questionnaires will not affect the instructional time or distract the teaching time, the questionnaires were distributed within the remedial sessions. After they were collected, the questionnaires were checked by the researcher and his assistants to decide on the best ones to be included in the thesis study. The incomplete questionnaires were excluded as well as the questionnaires that have only one answer for the whole questions were excluded as well. The selected ones then were inserted into the Excel Sheet template to be analysed afterwards.

As an initial phase of conducting semi-structured interviews, the informants should be predetermined. The communication skills of the interviewer are of a paramount important when it comes to semi-structured interviews (Clough & Nutbrown, 2007; Gillham, 2000; Ritchie & Lewis 2003) as they decide the validity and the kind of data that can explain the studied issue. In

addition, the interpersonal skills (Opie 2004) such as building good rapport with the interviewees to encourage them to speak freely about the needed topic are what the researcher should be acquainted with. More importantly is the construction of the interview questions (Cohen et al. 2007) which enables the researcher to obtain clear viewpoints from the respondents. Having this in hand along with the predetermined characteristics of the informants facilitates the procedures of conducting the semi-structured interviews and makes them more reliable sources of data. Part of the protocols of semi-structured interviews is the prompting questions which were used where the original questions were not clear enough for the interviewees. As for the protocols of the interviews, they were previously prepared and discussed with experts in this field on how to select the most conducive questions that can yield more reliable and valid data. The interviews took place at the same time as the annual ADVETI's conference when all the teaching staff gets together. The questions were piloted with teaching staff from Delma STS campus, which is not part context of the thesis study, before they were conducted with the interviewees. The interviews were conducted in the teaching staff room. As indicated above, the interviews were conducted with 10 participants 6 of whom were non-Arabs. Opie (2004) argues for the importance of having an intimate atmosphere to encourage the informants to speak freely about the phenomena under investigation and to elicit more insights from them. Thus, during the interviews, some peripheral topics were touched upon to create a natural atmosphere for the interview.

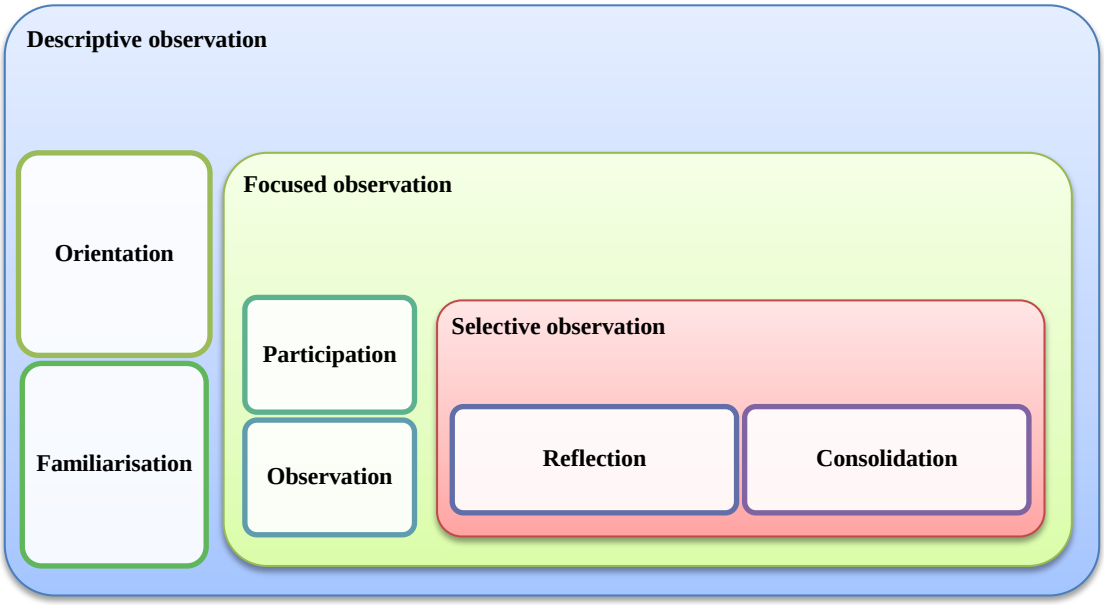


**Figure 9: Phases of Participant Observation adapted from Spradley (1980)**

The most inclusive definition to the context of this thesis study concerning understanding the procedures of participant observation is the definition that has been given to it by DeWalt and DeWalt (2010) in which they indicate that participant observation is "a method in which an observer takes part in the daily activities, rituals, interactions and events of the people being studied as one of the means of learning the explicit and tacit aspect of their culture" (p.260).

Talking about the procedures of conducting participant observation, the essential parts of the definition might be the explicit and tacit aspects of interaction. Here, the researcher as an observer involved in the events and the interactions that utilize iPads seeks to reveal the explicit and the tacit strategies and practices of implementing such device in developing learners' oral and listening skills. As mentioned above, the participant observations were divided into three phases in which 6 intervals were conducted each of which consisted of two periods 45 minutes each. Figure 8 above explains the three phases of participant observation.

It is above-mentioned that for the procedures of the participant observation to be conclusive and comprehensive, there should be three phases in which the observer started from orienting himself

with the context of the observation setting, involves himself with the people to be observed as far as it is participant observation and then reflect on the events and the interactions that have happened in the observation site. Furthermore, he could go back to the site later on to select the evidence to consolidate his point. As Spradley (1980), indicated above, there are three phases of participant observation: descriptive observation which gives an orientation for the researcher, focused observation in which the researcher concentrates on answering the research questions and selective observation where the researcher looks for evidence and practices to support the second phase. In figure 8 above, the procedures of observations were divided into the three phases to enable the researcher to have a full image about the kind of tripartite interactions - amongst the device "iPad" the learners and the instructors- to achieve the ultimate goal which is studying the strategies and the practices of implementing iPads in developing learners' oral and listening skills.

Visiting the sites where the observation should take place, the researcher found that there is a unified classroom setting among all the STS campuses. To illustrate, in every observed class there are two televisions, smart board and ordinary board along with iPads charging trolleys. Thus, it can be concluded that the infrastructure of utilizing the iPads is available at every classroom. Figure 9 below depicts the observed classrooms.

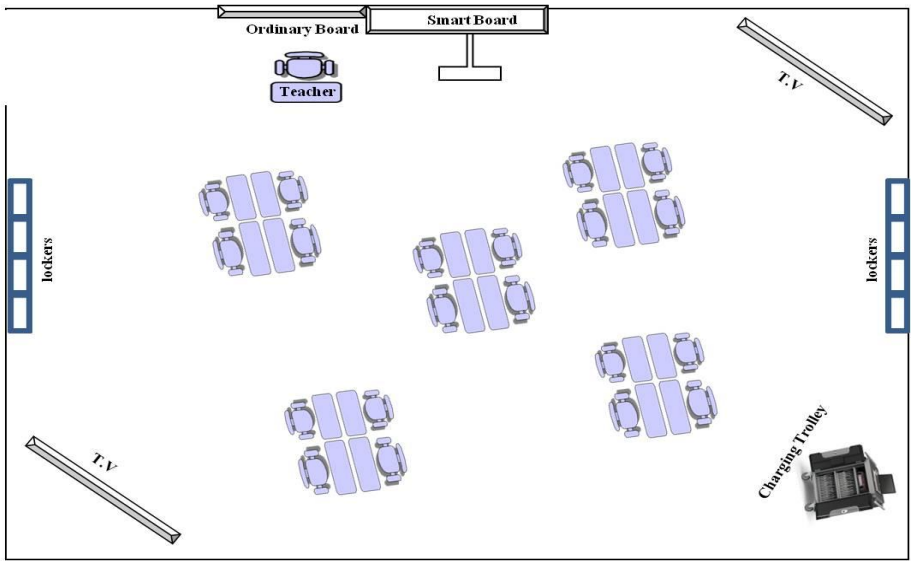


**Figure 10: Observed classroom setting**

### 3.6. Validity and Reliability

Although the two research concepts of reliability and validity are nested in the positivist perspective, their redefinition to fit into the naturalistic approach makes them necessary tools to demonstrate trustworthiness, plausibility and robustness in mixed methods research. Despite the discrepancies between positivist and interpretivist perspectives in the used terminologies to refer to the two concepts of reliability and validity, these two concepts are still used to refer to the research's credibility, consistency and dependability (Lincoln & Guba 1985) as far as they answer the question of "how can an inquirer persuades his or her audiences that the research findings of an inquiry are worth paying attention to" (Lincoln & Guba 1985, p.290). Thus, these two concepts will be used in this mixed methods thesis, though Healy and Perry (2000) cited in (Golafshani 2003) "assert that the quality of a study in each paradigm should be judged by its own paradigm's terms". In this section the two mentioned concepts are thoroughly explicated for the research methods used in the thesis viz: the questionnaire, the two focus group sessions, the semi-structured interviews and the participant observation.

As for the validity, clarity, and the reliability of the first research instrument, questionnaire, the questionnaire has been adapted from the previous studies that investigated M-learning issues (e.g. Al-Fahad 2009; Kafyulilo & Fisser 2011; Khaddage & Knezek 2013; Pollara 2011; Yang 2012). The internal consistency is checked and it indicates high reliability (Cronbach's alpha =86) (Tavakol et al.2011) as shown in Table 3 below:

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .856 | .860 | 38 |

**Table 3: Reliability Statistics**

As the high level of internal consistency is not enough to ascertain the measure of unidimensionality and homogeneity of the items in the questionnaire (Jasper 2010; Miller 1995) and due to the specificities of the context of the study, the questionnaire has been piloted to students from STS Delma which is not included in the intended thesis. According to Cohen, Manion & Morrison (2007), piloting the questionnaire to refine the content and check the suitability of the wording is central to the instrumentation process. After the piloting procedure the questionnaire is refined and redesigned to become an effective research tool. The intended initial domain of the questionnaire was categorized into three main domains namely: readiness, perception and implementation. The rationale for this categorization is that it is quite reasonable for a researcher to construct a platform for his/her research field. While distributing the questionnaire, the researcher conducted moderation sessions to the informants to identify any ambiguities. As most of the content of the questionnaire is adapted from the previous literature, no reliability tests were administered. More importantly, it was triangulated with the other

research instruments. It has been asserted that "collecting information from a variety of sources and with a variety of techniques can confirm findings" (Zohrabi 2013, p.258).

As for the participant observations, the researcher, as mentioned above, went through the three phases of participant observations. The first phase was for diagnostic purposes, the site of the study was defined and the kind of data needed was ascertained. In the second phase, the researcher started deploying the checklist to gather the related data. Then in the final phase the researcher systematically arranged the emerging themes to support his study. The observation checklists (Appendix B) touched upon iPad uses, the effectiveness of both teacher-student interaction and student-content interaction as well as the time spent on the two skills of listening and speaking. Due to the nature of the study, sequential exploratory, the obtained data from the three phases of observation were incorporated into the semi-structured interviews. According to Merriam (2009), the rich description of the data gathering procedures adds more reliability to the findings of the study. For the purpose of observation validity and reliability, member-check, triangulation and audit trial were administered to ensure the dependability of this research instrument.

Concerning the semi-structured interviews, the following steps were considered while conducting, transcribing and interpreting the interviews: firstly, Gillham (2000) interview protocols were followed. He contends that the interviews should begin before the actual interview. For the interview to be valid and reliable, the interviewees should be informed about the purpose, the time and the place as well as the duration of the interviews (Gillham 2000, p. 38). Secondly, the interview questions were selected in light of the research question which gives more reliability to the instruments. Furthermore, these questions were sent to experts in the field to check their relevance to the research questions and their internal validity. Sending the scripts

back to the interviewees to check and give their feedback, add another measurement in ascertaining the validity and reliability for the semi-structured interviews. Moreover, the analysis procedures were described thoroughly before during and after the interview.

As for the focus groups, the three domains were selected to feed into the objective of the study. Another point to ensure the validity and reliability of the focus groups is piloting the expected questions and the discussed issues and negotiating them with samples that are not included in the study. In addition, the final version has been sent to three different experts to check their internal validity. It was found that some items need to be changed as indicated in the piloting report section in this thesis study. On the other hand the structure of the focus group has been changed according to the participants' inputs to the focus group. This confirms the wisdom of selecting the participants based on the expected value of their input to the discussion. By and large, the last step ensures the reliability of the method and the instrument as well.

Concerning the participant observation, there were vital steps taken into account to ascertain its validity and reliability as a research instrument. One of the standpoints of using participant observation as a research instrument in a mixed methods approach is that it can be combined with questionnaires and interviews to gather "relatively firsthand information" (Johnson & Turner 2003, p. 314). Based on this standpoint, triangulating the given research instruments gives more credibility and validity to participant observation. Furthermore, the researcher makes use of the CDU representatives in each school to help in observing the interaction amongst the triadic aspects: the device, the learner and the context of the interaction. This step helps in enhancing the validity and the reliability of the study in two ways: first, it helps reveal authentic data as the observer is part of the teaching community. Second, it enables the researcher to avoid researcher bias. Moreover, the presence of the researcher in the observation site over a period of

time helps in decreasing the inhibitions and other adverse reactions so that the students started acting differently when being observed. These negative effects of being observed decreased "significantly after the researcher has been observing for a while" (Johnson & Turner 2003, p.312).

### 3.3. Research Ethics

Literature explicitly insists the paramount importance of the research ethics throughout the stages of the study (Creswell 2012; Lincoln 2009; Mertens & Ginsberg 2009). To maintain the research ethics, the researcher seeks the prior approval for conducting the study from the concerned senior staff. The participants' confidentiality as well as anonymity was maintained throughout the whole stages of the study. As the thesis involves human participants, a consent form (Appendix E) was provided to all the participants. Concerning teachers, the invitation email for conducting the focus group was enclosed with a statement to indicate that by replying to the invitation email, involved teachers accept willingly to participate in the study and they were informed that their participation is for research purposes. The purpose of the study was explained to them from the very beginning of the study. They were assured of the confidentiality of participation and the guarantee of participants' anonymity. As for the students, a letter was sent to their parents/guardians along with the consent form (Appendix E) in which the researcher explained and assured the parents/guardians that their children will not be at risk by participating in the current study.

### 3.4. Piloting the Study

As piloting the studies has a diversity of purposes such as testing the validity of tools, estimating the sample size and selection, testing the mechanisms and the procedures, it is essential to administer this piloting before embarking on this thesis. Piloting is defined as "small study for

helping to design a further confirmatory study" (Arnold, et al. 2009). According to Creswell (2011) for the instrument to be valid, it has to be administered within a small sample size of the population to consider their feedback before it has been adjusted accordingly. Having opted to conduct a mixed method approach in investigating the impacts that iPads might have on developing EFL learners' oral and listening performance, various research instruments have been utilized namely: focus group, questionnaire, semi-structure interview and classroom participant observation. Although the questionnaire is adapted and modified from previous studies e.g. (Al-Fahad 2009; Kafyulilo & Fisser 2011; Khaddage & Knezek 2013; Pollara 2011; Yang 2012), the researcher sent the adapted questionnaire along with the focus group questions and the semi-structured interview questions to three experts in the field of ICT and its implementation in education to double check the suitability and the validity of these research instruments. When he feedback and recommended adjustments had been considered, the final version of the questionnaire and semi-structured interview questions were sent to the selected sample for the piloting process.

As for the focus group, one of the recommendatory comments that the experts denote was to divide the scope of the focus group into three main domains which include 1) teachers and learners trained for the use of iPad 2) how they implement iPad and 3) the strategies of integrating iPad into teaching oral and listening skills. Some of the discussed issues such as questions 3 and 4 in the first domain and the other questions in the second and the third domains are to be reconsidered as they are related directly to English teachers rather than teachers' trainers. To ascertain the effectiveness and the efficacy of these given questions, English team leaders were invited to participate in the focus group sessions. The rationale for their invitation is that they combine the duties of teaching, attending classes to observe English teachers and training teachers to best implement iPads into their instructional plans and their teaching

practices. Therefore, it is worth expanding their participation as teacher trainers and as teachers and team leaders.

Concerning the questionnaire, the piloting reveals some minor adjustments. The questionnaire originally was adapted from previous studies as mentioned above. It has been divided into three aspects/sections? , the first which tries to measure the students' readiness to implement the M-learning device 'iPad', the second which attempts to explicate the feasibility and the use of the iPad and the third which illustrates the practicality of iPad implementation. Eight items are allocated for the first aspect, sixteen for the second aspect and fifteen for the third. All the experts acknowledge that some questions are negatively worded to test the internal validity of the items. The open-ended questions were adjusted according to the received recommendations from the experts who suggest that these questions are rather for the teaching staff as they tackle the strategies and the methods of utilizing the iPad. Therefore, they were adjusted to meet the specifications of the learners. This is literally how the experts state it "They are phrased in a way that is more appropriate to instructors and not to students. Students, in my experience, may not understand this kind of "lingo". I think if your audience is students, then the questions should be more specific and related to real life rather than abstractions". The table below explains the way the open-ended questions were rephrased to meet the sample level and understanding.

| The questions before amendments | The questions after amendments |
|---|---|
| What is your opinion of using iPad in teaching oral and listening skills? | Can you think of specific ways in which iPad has helped you develop your oral (speaking?) and listening skills in English? Please share your experience with us. |
| Based on your frequent use of iPad, what strategies do you usually use to develop your oral and listening skills? | Overall, what do you think about the use of iPad in teaching oral (speaking?) and listening skills? OR Please tell us about |

| | |
|---|---|
| | your experience in using iPad for learning oral (speaking) and listening skills in English |

**Table 4: Questionnaire Amendments**

In general, the items were clear and straightforward.

As for the interview questions, since they touch upon the iPad implementation to develop learners oral and listening skills, the review committee suggest the following changes for the introduction as well as the content of the interview questions. They recommend that in the introduction the researcher should exclude the teacher trainers from the interview and direct it to the subject specialists and teachers only. The rationale presented for this recommendation is that as the focus group will include the majority of the MPU, they should not be included in the interview in order to avoid overlap as well as to give space for the insight of different teachers instead of maximizing the role of MPU. Thus, due to the above mentioned amendments, some questions are deleted and others adjusted to best serve the purpose of the research instrument. In addition to the given questions for the interview, the experts suggested some more questions which seek to give more insight into the informants and give in-depth understanding of how effective the iPad is in teaching oral and listening skills. Moreover, it will provide opportunities for teachers to express their positive and negative feedback about the triad of M-learning device, learners and social context as signified by Koole's social constructivist model. The following table explains the adjustments to the interview questions along with the introduction.

| Before amendments | After amendments | Additional questions |
|---|---|---|
| The interviews are expected to extend from 25 to 40 minutes with the Master Power Users (MPU), | The interviews are expected to extend for 10 to 15 minutes with the teachers and the subject specialists | 1. What are the most frequently used apps? |
| 1. Do you think that students and teachers are ready to implement iPad in teaching and learning? | 1. From your own experience, do you think that the learners are ready to implement iPad in their teaching and learning context? | 2. Do you think iPad should/ should not be used all the time? |
| 3. What are the obstacles of iPad implementation in STS? | 2. What obstacles faced you while implementing iPad in STS? | 3. Do you think that using iPad extends learning outside the school/ classroom context? How? |

**Table 5: Interview Amendments**

Although it has been argued that "an essential feature of a pilot study is that the data are not used to test a hypothesis or included with data from the actual study when the results are reported" (Peat et al. 2002, p. 57), modifying the research instruments based on the findings from the piloting of the intended study, these data would be of a value. Peat et al (2002) suggest some procedures to be followed to ascertain the validity and the reliability of the research instrument which should be conducted during the pilot study:

- administer the questionnaire to pilot subjects in exactly the same way as it will be administered in the main study
- ask the subjects for feedback to identify ambiguities and difficult questions
- record the time taken to complete the questionnaire and decide whether it is reasonable
- discard all unnecessary, difficult or ambiguous questions
- assess whether each question gives an adequate range of responses

- establish that replies can be interpreted in terms of the information that is required
- check that all questions are answered
- re-word or re-scale any questions that are not answered as expected
- shorten, revise and, if possible, pilot again. (p. 123)

Robson (2002) clarifies that despite the difficulties that the observer encountered while observing participants' behaviours and the obstacles that hindered his ability to interpret these behaviours afterward, observation is still a fruitful data collection instrument. Furthermore, ensuring the validity of the observation, the purposes of the research or the research questions should be clear and a systematic justifiable approach should be followed to fully achieve the research objectives (Anderson 2004). Since the research approach is bound by "fitness for purpose" the intended research questions which tackle the strategies and the teaching practices demand an observation tool that can succeed. Piloting the observation revealed that it is consistent with the researcher's intentions and it can easily feed into the purpose it is designed for. The key words that the researcher developed were very helpful in recalling the needed information. The spaces given for description and reflection compensate for not videotaping the teaching context. It widens the options of the observer to thoroughly describe the site, the available M-learning infrastructure and the strategies and the practices that are taking place in the teaching setting. In the same vein, the reflection part helps in shaping the themes and constructs and the emerging themes to be triangulated with the other obtained data.

# Chapter 4

## Findings and Analysis

### 4.1. Introduction

The previous chapter outlined the methodological approaches that were used in this study. This chapter presents and analyses the findings. It is organised into three main sections. The first section presents the findings based on each of the data collection methods. In this section the results from the focus group, survey, interviews, observations, and triangulations are presented. Across each of the subsections, an extensive analysis with reference to previous studies is conducted with the underlying objective of situating the findings of this study in the literature. The second section reviews the achievement of the research objective and the extent to which this study answered the research questions. The third section provides a succinct summary of the overall findings.

The objective of this study was to evaluate the effectiveness of iPad implementation based on Koole's M-learning Frame Model for teaching English oral and listening skills to STS students. This section presents the findings as the methodological approaches that were used.

### 4.2. Focus Group

One of the qualitative data collection approaches that were employed by the researcher was focus groups. The study involved two focus groups each of which consisted of 8 (eight) participants. All of them were STS teachers with varied work experiences in teaching. In accordance with the *research question*s, the researcher discussed the following issues:

1. Teacher and student training in the implementation of iPad teaching and learning
2. Availability of adequate infrastructure in schools to facilitate M-learning
3. Relevance of technological training to teachers of English

4. The impact of iPad training on teacher performance (comparative of pre and post training periods)

### 4.2.1. Teacher and Student Training

Competence in M-learning on the part of teacher and the student are critical to the success of the iPad in teaching and learning. This is aptly demonstrated in the Conversational framework whereby the learner is expected to demonstrate an understanding of models and problem solutions (Laurillard, 2002). Essentially, both teachers and students must understand how M-learning and all its underpinning components work before they are able to use it in problem solving or learning. This is also demonstrated in Park's pedagogical framework where the efficacy of engagement with M-learning determines its successful utility.

During the focus group discussions, the researcher was able to collect data on teacher and student training (from teachers) and in particular on its efficacy in enabling them to use M-learning. The following section presents the main themes emerging from the focus group concerning training.

Fred:

> *"the institution has such training for teachers ..em but it was not enough it was just for ICT skills for example on how to register your iPads… "*

Tariq:

> *"I think that teachers receive enough training, but as you mentioned that the training only focus on the technicalities of using the iPad… not the pedagogical side I mean that teachers once they understand how to put the iPad in use… It will be their responsibility to search for and implement what suits them and their students and how these iPad applications help their teaching and learning targets"*

Lora:

*"it should be reconsidered er the if the way they are dealing and applying the iPads in teaching and learning is not appropriate at all"*

"*Specific applications to be used for teaching and learning specially for listening and no training for speaking*"

Karen:

*"… teachers received enough training by means of understanding how to download and activate the Apps, connecting the iPads with the smart boards and the Apple T.V which you can see here in this room"*

*"About the students I think well as I can see from my experience with them that they are even more brilliant than teachers… they show unexpected creative ways of making use of iPads which I think if it is exploited properly by teachers and well-directed it will make iPads as a fantastic tool for teaching and learning"*

The above excerpts reflect mixed albeit interesting points of views on the issue of training. The majority of the participants agree that there has been some training on the use of the iPad as an instructional tool. However, there is also a consensus that the training was largely basic and limited to technicalities. For instance, Fred describes the training as mere impartation of ICT skills in installation of Apps. Similarly, Tariq affirms that training is adequate despite the fact that he also concedes that it is limited to technicalities while lacking in pedagogy. For Lora, the use of the iPad in learning contexts is largely inappropriate for the students. This can be interpreted to mean inadequate training. According to Karen, students are better users of the iPad compared to teachers given their level of creativity in utilising iPads for learning. She also believes that this creativity can be harnessed to create an excellent instructional tool for teaching and learning.

The emphasis on training teachers on technical aspects of M-learning is also evidenced by the statements from the trainers. MPU2 (Master Power User and trainer), a participant in the focus group had this to say:

MPU2:

> *"On the other hand, I worked as a Master Power User (MPU) in training the staff on how to use iPads, especially those who are new to the iPad or newly joined the team, so we train them from scratch how to turn on and off the iPad how to create, secure and backup their accounts and data with a lot of tips and tricks delivered… We also train one core teacher to act as a MPU for troubleshooting any technical issue and how to resolve it; keeping the staff tuned with the most recent technology and Apps as well as the extracted strategies and practices"*

In sum, the findings on training show that teachers and students have indeed received enough training on the use of iPads for M-learning. However, the depth and usefulness of this training in aiding learning remains contentious. Two issues have emerged. First, is ICT training in technical aspects of iPad use adequate to facilitate the use of iPads in learning Second, how are teachers supposed to implement pedagogy via iPads without pedagogical training on the same? According to Tariq, it is the responsibility of teachers to consider how to bring in pedagogy upon being trained on the technical aspects. Jessica had the following to say

Jessica:

*"I think that all of my colleagues tried schology where they can find a lot of materials they can exchange materials and resources? so it is really good to send the assignment to your students before they come to class and give them enough time to prepare well/while at home you can use the features as you know of these Apps to even instruct your students directly with your own voice"*

For Jessica, self-training and peer education is adequate when it comes to pedagogy. This can be interpreted to mean that formal training on pedagogy is not necessary for M-learning. In essence, with iPads, teachers have an opportunity to innovate and adapt their pedagogies depending on the lesson and prevailing situation. This approach to pedagogy and indeed language learning has been supported by Cavus and Ibrahim (2009) and Gobel and Helmke (2010) who argue that self-directed learning through a process of discovery enhance the assimilation of new knowledge.

### 4.2.2. Availability of Infrastructure

The focus groups also investigated whether there was adequate infrastructure to support M-learning. Besides training, the availability of infrastructure is essential for adequate implementation of M-learning. As far as the issue of infrastructure is concerned, participants had the following to say:

Karen:

> *"All the other classrooms are equipped with similar devices to enable the optimal use of the iPads inside the classroom as well as outside the classroom"*

Jessica:

> *"I think we have a feasible infrastructure sometimes students forget their iPads till the last moments before they put them into the charging unit though it is available actually in our campus ... an I do not know about the other campuses but here the Wi-Fi is sometimes down so in this case you lose the connection with your students,"*

Khalid:

> *"As you can see that our schools are fully equipped so the infrastructure is there I think."*

Alex:

> "*Concerning the infrastructure UAE is good at coping with the technology and the rulers are very supportive in this issue they provide their educational communities with the latest concerning the mobility of education and the utilization of iPads*."

Based on the above responses, there is a general consensus that there is adequate infrastructure to facilitate M-learning in UAE schools. According to Karen, all classrooms and the external school environment are adequately equipped with the necessary devices to facilitate M-learning. Jessica also reports that the existing infrastructure is feasible. However, Wi-Fi is sometimes down in some areas within the campus. Wi-Fi makes possible the ubiquity of M-learning; therefore, its inadequacy can impact negatively on the efficacy of M-learning. According to Alex, infrastructure is adequate and sufficient to support educational mobility via M-learning. In sum, most of the participants agree that the infrastructure put in place by the government is generally sufficient to support M-learning. The importance of infrastructure in M-learning has been highlighted in previous studies by Sharples (2000) whose study concluded that the power of M-learning is in the ability to network community of peers and educators. Basically, the collaborative nature of M-learning is largely a result of the infrastructure (Barreto, 2003; Serrano-Fernandez, 2009).

### 4.2.3. Relevance of Training to teaching of English

The ultimate objective of this study was to evaluate the efficacy of iPads and M-learning technologies in the learning of language. Previous studies by McCarty (2005) and Bryan and Hegelheimer (2007) have shown that M-learning can be a highly effective tool in the teaching of language both spoken and written. This is primarily due to the possibilities presented through podcasts, videos and e-books. However, the ability to adequately utilise the above tools in

teaching English is largely a factor of training. This section presents findings from the focus group as to whether the training provided was relevant when it comes to the teaching of English.

Khalid:

> *"So to target your questions in the first issue yes I think that teachers receive enough training yet it doesn't tackle language development but still it paves the way for the teachers to go on choosing and implementing what suit the diversity of tasks, activity and the level of the students in terms of technology or in terms of linguistic competence."*

Jessica:

> *"Concerning the language developments, I think there are other Apps that can help in developing listening and speaking skills… I wish if the time is ok to go on and show some Apps that are related to developing English language"*

F1:

> *"I mean it is not only whether they receive enough training or not it is basically if they really believe in M-learning implementation and feasibility and effectiveness. To the best of my knowledge, teachers need to be persistent that is to say they need to keep it up and not easily condemning the new technology they need to insist on the integration and they need to instill in their learners that these are the features of the 21st century's learners."*

F3:

> *"Concerning the Apps, there are a few good Apps that students can use to practice their listening and mostly free Apps. One of the most recommended Apps is the use of TED talk with the students. As a strategy, I used to use this app and divide the activity into three phases in the first phase, I ask the students to listen while they are trying to get the gist or some ideas from the talk after that I provide them with some question comprehension ones of course"*

*"…it is a good tool for independent learning. Students can practise on their own to improve their skills. Another app that I have used for several times to develop my students language competence is IELTS listening practice app with my students and it helped them a lot. Also they use their iPad for recording their voice and practising their speaking, I know there are more Apps out there that can be used, I need to explore more"*

The excerpts from the three participants generally reflect the prevailing situation concerning training of teachers on how to use M-learning in the teaching of English. There is a general consensus that while training on technical aspects of M-learning was adequately provided, subject specific training was generally absent. Basically, there was no training at all on issues of how to use M-learning technologies to implement pedagogy.

Khalid states that while there was enough technical training, no training was provided on how to use M-learning to implement pedagogy. However, Khalid does not consider this to be a weakness. Instead, he sees this as an opportunity for teachers to experiment and implement diverse approaches in teaching the language. This perspective is also reiterated by Jessica who argues that there are Apps that can be used to teach listening and speaking skills. F1 also argues that pedagogical training is not very critical to the use of M-learning in teaching the language. To him, teachers should seek new strategies and approaches for integrating their pedagogy into M-learning. F1 further argues that this is necessary in preparing learners for 21st century needs and competencies.

The lack of pedagogical training in the use of M-learning in teaching the English language is both a weakness and strength. It is a weakness in the sense that most teachers would be at a loss as to how to effectively utilise M-learning technologies in teaching the language. However, this lack of training allows teachers to innovate on pedagogy and adopt relevant and applicable approaches for using M-learning to teach English. Similar findings are also seen in the study by

Aguilar (2007) where the importance of the individualized nature of M-learning is emphasized. The study by Serrano-Fernandez (2009) also established that the value of M-learning is its rich contextualization, accessibility and collaborative nature. Basically, pedagogical training on the use of M-learning to teach English might be necessary; however, it could also limit the ability of teachers to fully harness the power of M-learning in teaching English.

### 4.2.4. Impact of Training on Teacher Performance

One of the running challenges in teaching and learning has always been how to enhance the performance of teachers and teaching methods. M-learning has been hailed as a new strategy that will enhance teacher performance and improve learning (Ayala and Castillo, 2008; Luis de Marcos, 2006). However, the efficacy of M-learning is largely is a function of teacher performance which in turn is depending on training. In this regard, the researcher sought to understand from the focus groups whether the training offered to them contributed positively to their performance. The following excerpts show what participants had to say:

Juan:

> *"So iPads can be useful if they are used like any teaching tool ... like a like for example the calculator you can ask the student to use when it is needed otherwise the class will end in a chaos and it will ...will be hard to control a class of 23 students with such a distracting device especially if they have access to the net and the teacher cannot control this issue at all, I would recommend that teachers take the iPads and give them to the students whenever there is an activity or a task that needs an iPad"*

Khalid:

> *"I can say frankly that some teachers have a kind of phobia from technology they do not want to integrate it assuming that it is a distracter rather than a motivator for learners. I can say that in some classes when teachers challenge the students either by the task or by*

*the Apps selection then students will do better than if you dictate them everything and you do not give them the chance to show their individual creativity"*

Jessica:

*"it is really good to sent the assignment to your students before they come to class and give them enough time to prepare will at home you can use the features as you know of these Apps to even instruct your students directly with your own voice… using such features can help a lot as you can see also how to follow up your students by giving them timed activities or tasks, you can also correct their papers and store them here."*

The above excerpts present a mixed picture of the impact of training on performance. On the surface, training has generally enhanced the ability of teachers to utilise M-learning technologies in teaching. However, in terms of overall teaching effectiveness, the findings of this study show mixed results. For Juan, the introduction of iPads has made it difficult to control students in the class environment. According to him, iPads can be distracting; thus he recommends selective use of iPads depending on the situation. Juan's situation can be attributed to both inadequate training and general resistance to change. Basically, the training program did not adequately prepare teachers on the extent to which M-learning would transform the teaching process. This aspect is also seen in Khalid's response where he attributes technophobia amongst certain teachers as a factor for diminished ability or failure to achieve greater levels of efficacy with M-learning. Some teachers would rather stick to familiar pedagogical approaches than embrace largely unfamiliar technology. Essentially, for non-technology savvy teachers, training has not positively influenced their performance.

In contrast, Jessica points out that M-learning has significantly enhanced her performance as a teacher. She particularly refers to the ubiquity and collaborative nature of M-learning which has significantly empowered her teaching. These contrasting findings can be attributed to technology awareness before the implementation of M-learning. For teachers who had higher levels of

familiarity with the associated technologies such as iPads, training significantly benefited their performance. However, for the other teachers training did not positively enhance their performance. This finding echoes the findings by Goundar (2011) which concluded that the efficacy of M-learning is particularly dependent on user competency. Essentially, if a teacher is generally unfamiliar with new communication technologies, they are more likely to struggle with M-learning. This findings also reflects the argument by Godwin-Jones (2011) that M-learning implementation failure is largely attributed to a real lack of "conceptualisation of how language learning could be enhanced in new, innovative ways with the assistance of mobile devices" (p. 7). For participants whose performance has been negatively affected by the introduction of M-learning such as Juan, it was evident that there was a lack of appreciation for opportunities presented by M-learning.

### 4.3. Questionnaire

This study primarily adopted qualitative approaches; however, a survey was conducted which collected quantitative data to supplement the qualitative findings and analysis of this study. This section presents the quantitative findings. A total of 274 respondents participated in the survey. The survey consisted of two main components. The first part primarily investigated participants' opinions on the potential of iPads in learning. The second section focused on how participants have utilised the iPads in their learning context.

#### 4.3.1. IPad Potential for Learning

The main objective of this study is to establish effectiveness of the iPads as tools for teaching of English language. The opinion of teachers towards the iPad is an important factor in the successful adoption of iPads in teaching. Therefore, the first part of the questionnaire focused on respondents' perspectives on the potential of iPads in teaching and learning.

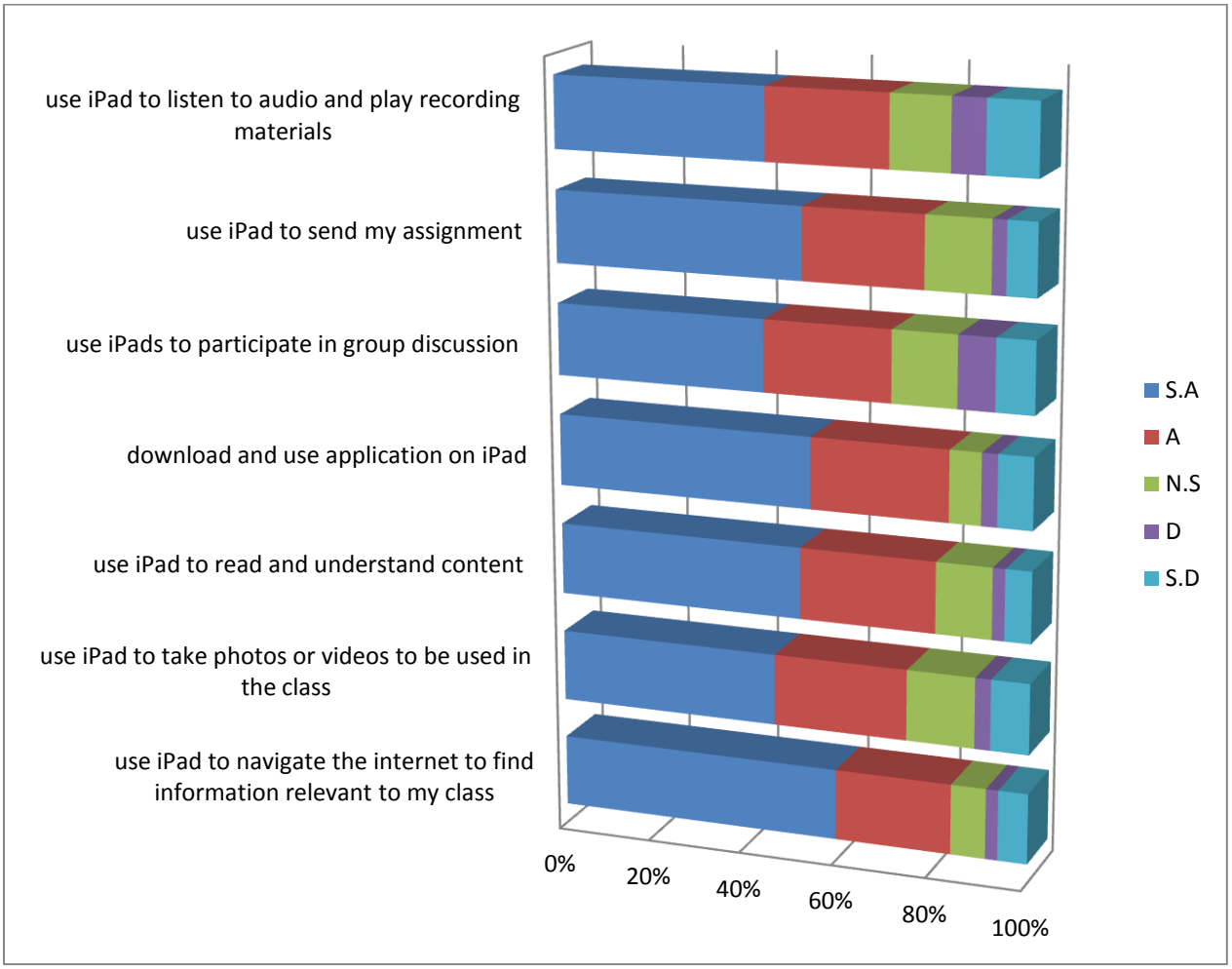


**Figure 11: IPad Potential for learning (I'm Confident)**

Figure11 above shows respondents' perceptions of the potentials of iPad for learning and within learning contexts. In response to the questions whether participants were sufficiently confident in using the iPad to navigate the internet and find relevant information, a significant majority of the respondents strongly agree; 167 out of the 274 participants strongly agree with just 17 strongly disagreeing. This accounts for 59.48 per cent of all participants with a total of 8 per cent of the respondents providing negative feedback. In terms of the ability to use the iPad to take video and photos, significantly lower percentage of respondents strongly agreed compared to those showing confidence in their ability to use the iPad to find information on the web. A total of 127 of the 274 strongly agreed with the assertion that they were confident in the use of iPads for

taking videos and photos. This is less than half of the total number of respondents (at just 46 per cent).

As far as confidence in the use of the iPad to read and understand content is concerned, 142 respondents strongly agreed with 78 agreeing. This accounts for more than 80 per cent of all respondents. However, a total of 24 participants (accounting for 8.7% of all participants) expressed lack of confidence with reading and understanding content with the use of the iPad.

On the ability to effectively engage in group discussions with the aid of an iPad, a total of 121 participants out of the 274 strongly agreed with 79 agreeing. This accounts for just 72 per cent of all participants. A total of 22 respondents strongly disagreed with 21 disagreeing. This is a significantly large number taking into account that collaboration and ubiquity are the core strengths of M-learning. In the class context, this would mean that one fifth of a class is unable to participate effectively in lessons. Studies by Koole (2009) and Illeris (2008) all emphasize the importance of interaction and collaboration within the socio-cultural contexts as essential to knowledge acquisition. Therefore, the inability for a relatively large portion of students to participate can subvert their ability to learn. In this regard, the intervention of teaching strategies that fosters group work discussions and plan for them accurately would help in bridging this gap.

On the ability to use the iPads to send assignments 143 out of the 274 participants strongly agree with 69 agreeing. As for the ability to use the iPad to listen to audio and play recording materials, a total of 122 participants strongly agreed with just 70 of them disagreeing. These are minor elements in the use of iPads for M-learning; however, they are essential for smooth implementation. The expected reasons behind the disagreement to listen to audio and play recording is that little attention has been paid for the listening and speaking in the instructional plans.

### 4.3.2. Willingness to learn Using the iPad

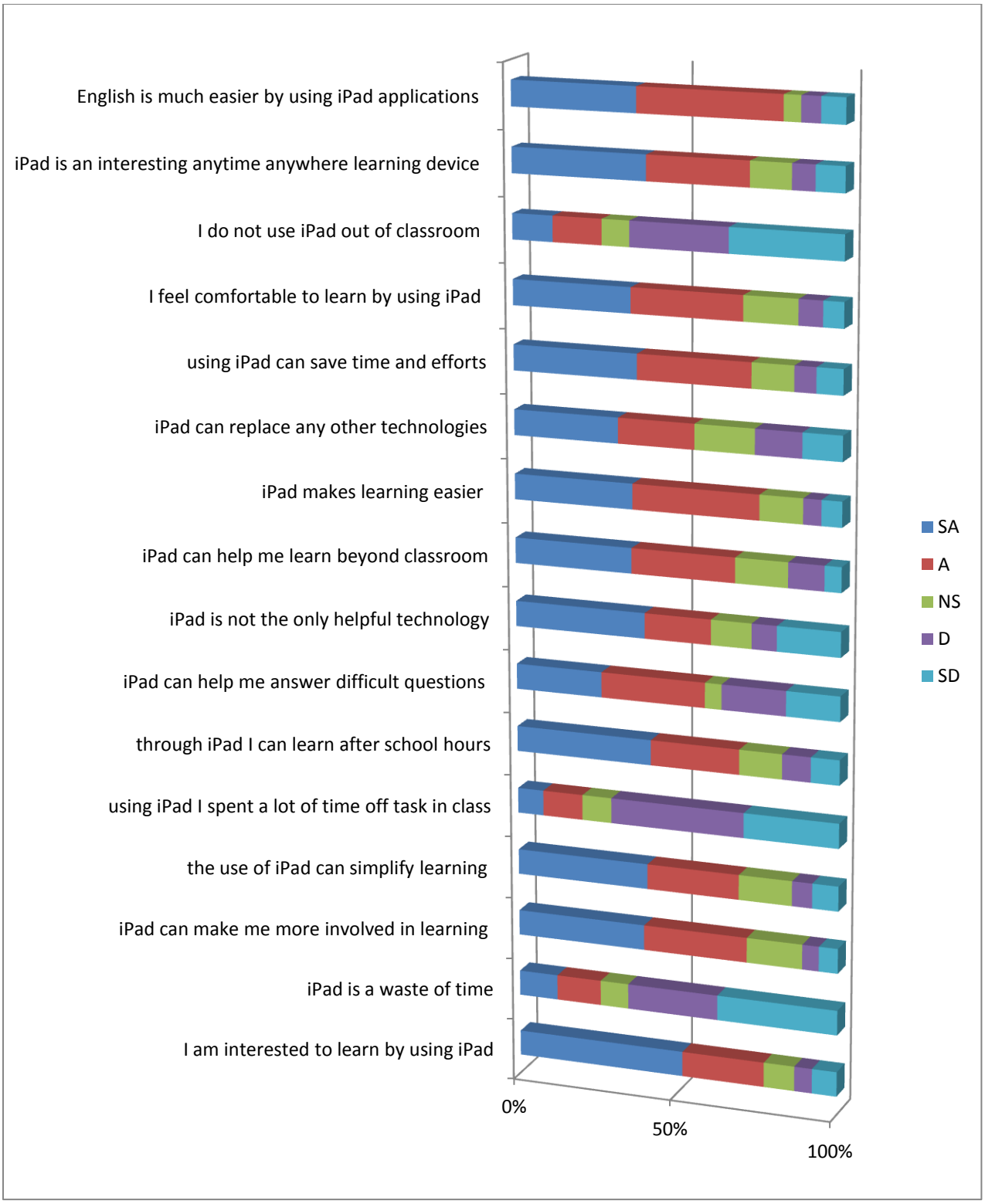


**Figure 12: Willingness to learn using the iPad (I think that…)**

When asked about their interests in learning with the iPad, a total of 142 respondents indicated that they are interested in learning with the iPad (accounting for 51% of all participants). Only 33 out of 274 participants indicated that the iPad is a waste of time (accounting for just 12% of all participants). At the same time, a total of 109 participants strongly agreed with the notion that using the iPad will enhance their level of engagement in learning (accounting for 39.78 per cent). Similarly, 112 participants out of 274 strongly agree that the iPad simplifies learning (accounting for 40% of all participants). These findings generally show the untapped potential of the iPad as learning tool. Majority of the respondents have expressed their interests considerably in the use of the iPads for learning as shown in Figure12 above.

There were also generally positive responses on variables such as: the role of the iPad in extending learning beyond the classroom (99 respondents), making learning easier (100 respondents), saving time and effort (104 participants), and is interesting and ubiquitous (112 participants). Similarly, the majority of the participants strongly agree that the iPad is not the only helpful technology in learning (110 participants) as they are exposed to use laptops and other M-learning devices such as the mobile phones.

### 4.3.3. IPad use in learning Context

The previous section focused on respondents' perspectives on their degree of confidence in the use of the iPads for learning. This section focuses on the actual practice. It seeks to determine whether the sentiments expressed above are actually implemented in practice. Due to the significance of using iPads in the learning context, every item is analyzed separately. The findings of this section of the questionnaire demonstrate that about 56.2% of the respondents used the iPad usually to download an application that helps them learn something new. The following table and figure demonstrate the above results respectively.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 154 | 56.2 | 56.2 | 56.2 |
| | Sometimes | 66 | 24.1 | 24.1 | 80.3 |
| | Not very often | 30 | 10.9 | 10.9 | 91.2 |
| | Rarely | 7 | 2.6 | 2.6 | 93.8 |
| | Never | 17 | 6.2 | 6.2 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 6: using the iPad to download an application that helps to learn something new**

Although it has been noticed from the observation that students resort to their mobile phones rather than iPads to look up new things, the following table7 shows that about 44.5% of the respondents usually used the iPad to look up something that they do not know or understand in the class.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 122 | 44.5 | 44.5 | 44.5 |
| | Sometimes | 84 | 30.7 | 30.7 | 75.2 |
| | Not very often | 37 | 13.5 | 13.5 | 88.7 |
| | Rarely | 12 | 4.4 | 4.4 | 93.1 |
| | Never | 19 | 9.6 | 9.6 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 7: using the iPad to look up something that students do not know or understand in the class**

From the following table we can observe that about 44.9% of the respondents usually used the iPad to engage in social networking or group work. Adding to this, 23.4% indicated that they sometimes use iPads to engage in the same activities results in a relatively significant accumulative percent.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 123 | 44.9 | 44.9 | 44.9 |
| | Sometimes | 64 | 23.4 | 23.4 | 68.2 |
| | Not very often | 43 | 15.7 | 15.7 | 83.9 |
| | Rarely | 21 | 7.7 | 7.7 | 91.6 |
| | Never | 23 | 8.4 | 8.4 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 8: using the iPad to engage in social networking or group work**

As for reminding students of their homework, the following table shows that about 45.3% of the respondents usually used iPad to write to remind students of homework. The bar chart below also displays the same. Although the accumulative percentage is significant, the reason for opting not to write reminders is valid here as the learners are experiencing ubiquitous learning. Thus, since they engage in group work, they need not take that reminder as the learning is ceaseless.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 124 | 45.3 | 45.3 | 45.3 |
| | Sometimes | 71 | 25.9 | 25.9 | 71.2 |
| | Not very often | 32 | 11.7 | 11.7 | 82.8 |
| | Rarely | 20 | 7.3 | 7.3 | 90.1 |
| | Never | 27 | 9.9 | 9.9 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 9: using the iPad to write notes to remind you of homework**

From the following table we can observe that less than half of the respondents with a percentage of about 44.5% usually used the iPad to read an article or a text. The bar below also displays the same. This explains the reasons why teachers in the focus group are not heavily dependent on the iPad as the only teaching tool.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 122 | 44.5 | 44.5 | 44.5 |
| | Sometimes | 64 | 23.4 | 23.4 | 67.9 |
| | Not very often | 50 | 18.2 | 18.2 | 86.1 |
| | Rarely | 17 | 6.2 | 6.2 | 92.3 |
| | Never | 21 | 7.7 | 7.7 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 10: using the iPad to read an article or a text**

Sharing pictures or videos with teachers or classmates is indicated with about 44.9% of the respondents who usually used the iPad to do so. The bar below also displays the same. This is in harmony with the findings as roughly the same percentage is indicated when it comes to engage in social networking or group work

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 123 | 44.9 | 44.9 | 44.9 |
| | Sometimes | 68 | 24.8 | 24.8 | 69.7 |
| | Not very often | 43 | 15.7 | 15.7 | 85.4 |
| | Rarely | 22 | 8 | 8 | 93.4 |
| | Never | 18 | 6.6 | 6.6 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 11: using the iPad to share a picture or a video with teacher or classmates**

Surprisingly, from the following table we can observe that about 41.2% of the respondents have usually used the iPad to play an education game. This result is low compared to the significance of digital games in education. Digital games need to be motivational and engaging though not fun. It is reported that based on these games, learning will take place whether implicitly or explicitly (Minner, et al 2010; Mohammed & Woollard 2009; Patten, et al 2005; Pegrum, Howitt & Striepe 2013). Although, the uniform pedagogy for these games was based on a behaviourist model, the new models incorporate situated, experiential and socio-cultural pedagogical approaches. Exponents of game-based learning in education i.e. (Ramirez & Quijano Plata 2013; Rosenberg 2001; Traxler 2009; Whalley, et al 2011) claim that these games

are essential for employability skills especially for the vocational students as they include different strategies such as good communication skills, collaboration and problem-solving skills.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 113 | 41.2 | 41.2 | 41.2 |
| | Sometimes | 55 | 20.1 | 20.1 | 61.3 |
| | Not very often | 44 | 16.1 | 16.1 | 77.4 |
| | Rarely | 22 | 8 | 8 | 85.4 |
| | Never | 40 | 14.6 | 14.6 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 12: using the iPad to play an educational game**

Another indicative finding shown in the table below that about 40.9% of the respondents indicate that they usually used the iPad to listen to an exercise and answer the questions and about 41.6% of the respondents usually used it to help them in their listening practice. With the accumulative percentage of 71.2%, it is worth mentioning that the iPad is beneficial in this case. In the same vein, table14 below shows that about 44.9% of the respondents usually used the iPad to develop speaking activity which gives the iPad the reputation of playing a decisive role in developing listening and speaking skills. On the other hand, about 47.8% of the respondents usually used the iPad to help in their presentation, it is becomes clear that the iPad is a comprehensive tool for teaching and learning. The following tables and figures demonstrate the above results.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 112 | 40.9 | 40.9 | 40.9 |
| | Sometimes | 83 | 30.3 | 30.3 | 71.2 |
| | Not very often | 43 | 15.7 | 15.7 | 86.9 |
| | Rarely | 14 | 5.1 | 5.1 | 92 |
| | Never | 22 | 8 | 8 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 13: using the iPad to listen to an exercise and answer the questions**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 123 | 44.9 | 44.9 | 44.9 |
| | Sometimes | 83 | 30.3 | 30.3 | 75.2 |
| | Not very often | 41 | 15 | 15 | 90.1 |
| | Rarely | 15 | 5.5 | 5.5 | 95.6 |
| | Never | 12 | 4.4 | 4.4 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 14: using the iPad to develop speaking activity**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 131 | 47.8 | 47.8 | 47.8 |
| | Sometimes | 82 | 29.9 | 29.9 | 77.7 |
| | Not very often | 33 | 12 | 12 | 89.8 |
| | Rarely | 18 | 6.6 | 6.6 | 96.4 |
| | Never | 10 | 3.6 | 3.6 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 15: using the iPad to help you in your presentation**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 114 | 41.6 | 41.6 | 41.6 |
| | Sometimes | 82 | 29.9 | 29.9 | 71.5 |
| | Not very often | 33 | 12 | 12 | 83.6 |
| | Rarely | 30 | 10.9 | 10.9 | 94.5 |
| | Never | 15 | 5.5 | 5.5 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 16: using the iPad to help you in your listening practice**

From the following tables we can observe that about 40.1% of the respondents usually used the iPad to submit any assignment with an accumulative percent of 70% leave no doubt that teachers can depend on the iPads as an assessment tool. The level of using the iPad in communication is relatively low as only about 35.8% of the respondents indicate that they usually used the iPad to communicate with classmates out of the class and about 36.9% usually used it to chat with English native speakers. In this regard, as mobile phones are more available while students are out of the learning context, they are more frequently used than the iPads to communicate with

their friends and with English native speakers. As for watching English movies, about 43.8% of the respondents indicated that they usually used the iPad to watch English films or programmes. A cumulative percent of 70%, using the iPads to watch English movies is preferable to the use of mobile phones as the iPad's compatibilities are more suitable than the mobile phone The following tables and figures record the above results.

The above results are mirrored in the literature. At Makerere University, Sebbowa (2012) investigated the role of mobile phone forums in enhancing interactivity in teaching. Sebbowa considers mobile phone forums as appropriate in the large class situations in an educational situation. In her findings, Sebbowa indicated that mobile phone forums enhance interactivity and collaboration between teachers and students.

In another study in North Nigeria, Nwocha (2010) carried out research to further the study of English through M-technology. Similar to the findings of Mohammed and Woollard's (2009) study, Nwocha (2010) based his study using an SMS based mobile learning system to teach English to high school students. The researcher noted that when tested, the students in the experiment performed better than the ones who were taught in traditionally based classrooms (Nwocha, 2010). A further study that produced similar results with a different M-learning device is that of Clarke et al. (2008). They studied the viability and the acceptance of using the SMS-based learning system to teach and engage students in language learning at Hong Kong University of China. The findings of the study showed that the students found M-learning worthwhile and engaging, and it helped them in their acquisition and retention of the language taught via this learning system.

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 110 | 40.1 | 40.1 | 40.1 |
| | Sometimes | 90 | 32.8 | 32.8 | 73 |
| | Not very often | 39 | 14.2 | 14.2 | 87.2 |
| | Rarely | 19 | 6.9 | 6.9 | 94.2 |
| | Never | 16 | 5.8 | 5.8 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 17: using the iPad to submit any assignment**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 98 | 35.8 | 35.8 | 35.8 |
| | Sometimes | 75 | 27.4 | 27.4 | 63.1 |
| | Not very often | 44 | 16.1 | 16.1 | 79.2 |
| | Rarely | 28 | 10.2 | 10.2 | 89.4 |
| | Never | 29 | 10.6 | 10.6 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 18: using the iPad to communicate with classmate out of the class**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 101 | 36.9 | 36.9 | 36.9 |
| | Sometimes | 71 | 25.9 | 25.9 | 62.8 |
| | Not very often | 46 | 16.8 | 16.8 | 79.6 |
| | Rarely | 19 | 6.9 | 6.9 | 86.5 |
| | Never | 37 | 13.5 | 13.5 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 19: using the iPad to chat with English native speakers**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 120 | 43.8 | 43.8 | 43.8 |
| | Sometimes | 80 | 29.2 | 29.2 | 73 |
| | Not very often | 31 | 11.3 | 11.3 | 84.3 |
| | Rarely | 14 | 5.1 | 5.1 | 89.4 |
| | Never | 29 | 10.6 | 10.6 | 100 |
| | Total | 274 | 100 | 100 | |

**Table 20 : using the iPad to watch English movies**

4.3.4. Correlations and Regression Analysis

Correlation and regression are widely used to test for the extent to which variables influence each other. Regression analysis in particular is appropriate for testing the extent to which independent variables influence dependent variables. In this particular case, correlation and regression analysis are used to test the extent to which perceptions towards the iPad amongst other elements influences the likelihood of adoption and acceptance amongst students.

**4.3.4.1. Correlations**

The table of correlations (Appendix: G) shows significant correlations amongst the variables used in the quantitative analysis. This section analyses these correlations in the context of how the iPad and M-learning enhances learning overall and specifically how it improves oral and listening skills. It also refers broadly to Koole's constructivist framework to situate the findings from the correlation analysis.

The correlation analysis shows that there is a significant positive correlation between downloading and app that lets a student learning something new and a student being able to look things up that he or she does not know or understand (at .455). Similarly, downloading an app that helps one learn something new has a significant positive correlated with engaging in social networking group work (.242), putting down reminders for homework (.360), sharing pictures or videos with teachers or classmates (.350), developing a speaking activity (.277), helping with a presentation (.306), helping with listening practice, and enabling students to find relevant information about class work (.577). These significant correlations reflect on the power of M-learning and the iPad in improving the educational experience.

Koole's social constructivist framework (Koole, 2009) emphasises the idea that students need not only develop surface strategies for maintaining learning throughout their lives, they also need

to develop built-in strategies that can enable them to support different levels of understanding. Biggs (1999) also states that good teaching strategies should entrench deep learning. The findings from the correlation analysis show the role of the iPad and M-learning in enhancing students' educational experience. First, iPads and educational Apps provide an opportunity for sustained self-directed learning. Students are able to easily look for gaps in their knowledge bases and learn new things. Basically, the iPad entrenches socialised deep learning. In addition, the ubiquitous nature of the iPad means that any context can be a learning context. Whether in class, at the playing field, or at home, students are able to instantly engage with their iPads to ask and find answers to questions and issues.

These findings echo previous studies by Hui et al. (2005), Martin-Blas Serrano-Fernandez (2009) and Ayala and Castillo (2008) whose studies concluded that M-learning makes learning continuous, personalised and richly contextualised. M-learning and the iPad has made it possible for students to remotely engage with each other and with teachers about class work and other activities that enhance learning. This has made learning ubiquitous and more socialised. The sphere of learning is not limited to the classroom or demarcated to certain boundaries. M-learning has made learning possible anytime and anywhere. Previous studies by Luis de Marcos et al. (2006) and Goundar (2011) have largely arrived at the same conclusions arguing that M-learning is driving a paradigm shift in education.

Specifically in terms of enabling oral and listening skills, the findings of this study overwhelmingly shows that the iPad enhances the learning of English language. It has made it possible to self- record, listen and share with fellow classmates and teachers which has significantly enhanced the development of oral and listening skills. However, the iPad is not without its challenges when it comes to learning the English language. Some of these issues have

been highlighted in several previous studies. e.g. (Anderson, 2002; Guerrero, Ochoa, Collazos & 2010; Drent & Meelissen, 2008; Falloon, 2013 Yagang 1994).

The correlation analysis shows that M-learning and the iPad are not significantly correlated with the idea that they make learning English language easier. The results show that M-learning and the iPad can facilitate the learning experience; however, they do not necessarily make learning the English language any easier. However, the findings of this study show that when it comes to learning English, the iPad and M-learning are significantly correlated with making learning more involving and engaging (.443), simplifies the learning process (.374), provides help beyond the classroom context (.481), saves time and effort (.404), and makes learning more comfortable (.487). In sum, the iPad and M-learning have largely served to improve the context of learning which has immensely benefited the learning of English. Basically, it has provided more tools to allow teachers and students to better engage with learning.

Nevertheless, even as the iPad and M-learning have a holistic enhancement in the contextual aspects of learning English, issues of pedagogy have not been effectively tackled. The fact that the iPad and M-learning have significantly provided more than adequate tools yet most students are still of the opinion that learning English is not any easier points to a failure in pedagogy. According to Kobie (2011), there is still a lack of in-depth investigation into how the iPad and M-learning can be effectively integrated into pedagogy to yield the best results. Issues of applicability and practicality still abound in the use of the iPad and M-learning in learning contexts. Even though the iPad and M-learning have made it possible to fully put into practice Vygotsky's theory of sociology and learning and Piagetian individualized learning, its novelty has undermined its practical implementation and applicability in learning contexts.

### 4.4. Interviews

Interviews underpinned qualitative data collection for this study. The researcher collected a good deal of and varied sets of data on the use of M-learning applications via the iPad in teaching English language and also in teaching in general. The researcher sought to gather data on: the relevance and efficacy of the iPad as a teaching tool, the ability of teachers and students to benefit from the iPad as a teaching and learning tool, teachers' and students' readiness for implementing the iPad for teaching listening and speaking skills using the iPad, best practice in implementing the iPad in teaching speaking and listening skills, challenges faced when implementing the iPad, practical experience with the use of the iPad as a teaching tool, and other pertinent issues in the implementation of the iPad in M-learning and teaching in general.

The researcher collected a significant amount of data from the interview sessions. Each interview lasted between 10 and 15 minutes where teachers and curriculum subject specialists were asked a broad range of questions concerning use of the iPad in M-learning. In order to analyse the results effectively, the researcher categorised responses in accordance with the questions asked. The researcher then identified responses that reflected the general theme or embodied the prevailing points of views of the respondents. This section presents some of the excerpts extracted from the transcribed responses. This is followed by a content and thematic analysis that is also grounded in previous studies.

#### 4.4.1. What do you think of iPad as a teaching tool?

At the outset, the researcher tries to evaluate teachers' perspectives on the use of the iPad as a teaching tool. This research was largely motivated by the fact that the iPad and M-learning are relatively new learning platforms. Acceptance or rejection of iPads as learning tools is also largely a factor of socio-cultural factors and evolving pedagogy. Therefore, the purpose of this

first question was to determine whether cultural and pedagogical choices could have influenced teachers' acceptance of the iPad as a learning tool and M-learning in general. The following are some of the excerpts that highlighted the prevailing opinion on the issue

Interviewee 1:

> *''I think if it is used correctly emmm it can be very helpful for the students, I personally em use the iPad in my students in grade eleven ESP class and they are very professional in using it.''*

Interviewee 3:

> *"Emm aa it has got pros and cons.. and then a lot of things with I Pads are pretty good. Emm you really got to control the use of the iPad to get the full benefit then if it is not controlled the kids shut off and do not listen or concentrate on the iPad rather than the teacher so as long as it is controlled iPads can be effective."*

Interviewee 4:

> *" Aaa the iPad as a teaching tool, it can be aa usful aa using different Apps it is able to have a quick access to the internet aa emm I think amm how do we use it in the classroom the aaa many students if they have the aaa em books downloaded into the iPad it is easy to aaa have a quicker access than just via the internet so it has more experiencing."*

Interviewee 5F:

> *"I think personally it is an excellent tool but it depends on how you use it for example when we first get to use it in grade nine in ATHS we actually need to teach students how to use it first of all then how to use the Apps and things like that and the teachers as well need to know or taught exactly how to use it actually it is a very very useful tool but personally I think they should block iPads and use pens and papers because they are forgetting how to use them and the relay too much on the iPads specially in spelling"*

Interviewee 5M:

> *"I think it is a great tool as well for both teaching and learning …. It is more useful if it is used correctly I think from the teacher's side it is quiet easy it is quiet good to move but for students*

*they can't access may far too much may something they do not need which end up may getting in the way of learning because it is there and they are working on it, it is quiet easy for them to work in the background for some games and then they do their work and then they switch to the games when you move so it is great but it needs to managed from people to limit what students need and what they can access on the iPads."*

Based on all of the above excerpts, the iPad is an excellent teaching tool. /Judging by all the above excerpts, the iPad would appear to be an excellent teaching tool. However, one of the main emerging issues is the challenge presented by class control. According to interviewee 1, the iPad is an excellent device and its efficacy as a teaching tool has largely been due to students' professionalism in using it. According to Interview 2, students and teachers can only derive full benefit from the iPad if its use is controlled. Otherwise, students can easily shut off the teacher and concentrate only on the iPads. The issue of class control is also expressed by interviewee 5M who argues that allowing access to a wide range of Apps actually impedes learning. Therefore, Interviewee 5M recommends limiting what students can do with the iPads in the classroom context.

The issue of the efficiency of the teaching process also came out clearly from the interviews. According to Interviewee 4, working with online books without first downloading them slows down the learning process which can impede the learning experience. According to Interviewee 5M, the numerous M-learning Apps/devices present a challenge to both teachers and students as they have to sift through all of them to know which ones are really suited for their specific lesson plans and strategies.

Previous studies on M-learning have largely considered the lack of student control as a positive and not a weakness of M-learning. For instance, Han and Li (2010) define an M-learning context as a situation where learners are in control of their learning. They also go further to state that the

concept of M-learning is premised on learners' individual openness to cognitive engagement in M-learning activities. Essentially, the lack of control that most teachers decry is a fundamental tenet of M-learning. According to Han and Li (2010), it is to the independence of learners that M-learning owes its success. This aspect also has broad implications for pedagogy. With iPads, learning is both social and individual; depending on context, M-learning can be mostly individual. In this regard, M-learning embodies the Piagetian theory of learning by creating a learning process that is largely centred on the student (Vadeboncoeur, 1997). Therefore, the fact that most of the teachers interviewed cite lack of control as a disadvantage of iPad use reflects inadequacy in training. They have failed to appreciate the core strength of the iPad as a tool in M-learning.

### 4.4.2. Do you think that students and teachers are ready to implement iPad in teaching and learning?

Readiness for implementation of the iPad in teaching and learning is critical for its effective use in pedagogy. Readiness encompasses several aspects including: the availability of infrastructure, the training of teachers, and the availability of M-learning materials to be used. The goal of this open ended question was to establish that this is the case with the introduction of M-learning in UAE. The following are some of the excerpts highlighting readiness for the implementation of M-learning.

Interviewee 1:

> *"I emm I think we are ready but we do need a little more practice in actually using it in classrooms"*

Interviewee 3:

> *"May be not all of them .. I think they need guidance it is easy to use the iPad and the teacher can see all of them got an iPad but it is only through experience to find out what .. how to deliver like aa like a period with the iPads and where the iPad can be used effectively where it will assist teacher rather than decrease the effectiveness of that session so the teacher needs to be aware of that and practice to makes perfect you got to sometimes think through the teacher to and the deep end and a very cognitive realize what you need to do different so that the iPad is helpful rather hindrance."*

Interviewee 4:

> *"Aaa I think a I think they ready so long as we have the right infrastructure I think it is an important thing about the iPad use is the aaa the need to have the right software and that stuff because the iPad could be a tool and also can be a toy and so .. so long as we use appropriately right at that time we will be ready. "*

As concerns readiness to use iPads and implement M-learning, a number of issues have emerged. Due to the newness of M-learning, best practice is virtually non-existent in the UAE. According to Interviewee 1, there is need for more practice. Similarly, Interviewee 2 also argues that there is need for more experience on the part of teachers in order for them to effectively administer M-learning. According to Interviewee 3, it is only through increased experience that teachers would be able to deliver effective sessions. Interviewee 4 agrees that infrastructure is there; however, management and operationalization of M-learning still remains a challenge especially when it comes to the availability of the right software. In sum, when it comes to readiness, UAE teachers' preparedness is below par. In terms of pedagogy, most of the teachers interviewed were largely of the opinion that, they were not ready. However, in terms of the existence of adequate infrastructure, most teachers agree that it was sufficient.

This general lack of teacher readiness reflects an aspect of Park's (2011) "Pedagogical Framework for Mobile Learning". According to Park (2011), a certain level of expertise is

required for successful implementation of M-learning. This basically means that M-learning is more appropriate in situations where context expertise is widely available. Similarly, most of the theories of M-learning emphasise the importance of the socialised nature of M-learning which requires familiarity with the device in order to ensure its effective use (Kearney et al., 2012). In the context of this study, device familiarity amongst students and teachers was largely adequate. However, at the pedagogical level experience was lacking. This negatively impacted readiness for the implementation.

### 4.4.3. How can you best implement iPad in teaching listening and speaking skills?

The primary aim of this study was to evaluate how M-learning can be used to teach the English language. The aim of this particular question was to gather specific data on how teachers were using the iPad to teach language (both speaking and learning). The following excerpts represent the most prevalent approaches.

Interviewee 1:

> *''It is really good for speaking because I get the students to record themselves and then playback and then they hear themselves so they can hear emmm any mistakes in pronunciation so they do it again so it actually makes them more comfortable when they record themselves because initially they are not very comfortable in listening to their own voices but once they have done it few times they will be more comfortable and gain more confidence.''*

Interviewee 3:

> *''Listening and speaking …for listening …. A um sometimes we deliver a subject to a student and they don't tend to listen unless they got something to look at you do this all the time when you do a PowerPoint presentation even for adults… you give them something to read so as you talk they can read something so you use their two senses for them to remember what they listen to the same with the students specially with boys they … you can talk to them but as long as you have got a visual tool that can assist on what they are listening for them to remember and all*

*through staff I Pad is good when you do speaking type classes where you got the students have conversation and record them in the iPad then they can watch again on their own or they can watch it as a class and you can what was good and what they did bad it is very good that way because it is instant you can record it and then watch it straight away. ''*

Interviewee 4:

*''Listening and speaking skills …aaa … I thing using the iPad aa …a so aa in classrooms as long as students have headphones then the iPad is they are able to listen to different texts like for multiple times a at the long pace as supposed to in classroom using listening exercises were we play MP3 over the entire a class sound system then you know if one person makes noise it can be a problem that the iPad use every one has to listen to it on their own with their own headphones aaa that is an improvements as far as speaking aa generally in my classes I do the speaking things where they are talking to each other and so they can be discussing whatever in the iPad.''*

As regards the best strategies for using the iPad in teaching language skills, several elements of pedagogy have clearly emerged. According to Interviewee 1, allowing students to record themselves and play the recordings back is the best strategy for teaching speaking and listening skills. This is largely a self-directed process. According to Interviewee 3, it is the visualization and engagement offered by M-learning that enhances the efficiency of teaching speaking and listening skills. To Interviewee 3, the collaborative is also an important aspect in the teaching of language skills. Interviewee 4 particularly mentions the individualized nature of iPad powered learning as important in enhancing listening skills. Basically, the iPad and M-learning in general have made it possible to implement pedagogy in new and novel ways.

The best and most prevalent strategies for teaching language with the help of the iPad borrow heavily from Koole's (2009) FRAME model. The FRAME model outlines a three circle Venn diagram. The first aspect focuses on interactivity offered by the device between the learner and learning context. It is this interactivity that also builds on Vygostky's theory of learning which is premised on the socialized nature of learning. Basically, iPads provide teachers with an

opportunity to leverage on their interactivity to optimize student collaboration, contextualization of content and personalized learning pace. Secondly, the ubiquity and ease of reference provided by M-learning technologies has significantly enhanced learning efficiency and convenience (Kumar et al., 2010).

### 4.4.4. What do you think are the benefits of iPad in teaching oral and listening skills?

Evaluating the benefit of iPad use in teaching oral and listening skills extends the primary objective of this study. Oral and listening skills form the foundation of learning the English language. Therefore, the researcher sought to collect relevant data on the particular benefits of the iPad in teaching oral and listening skills.

Interviewee 1:

> *''Emm it is something that they can do I their own time outside the classroom as well as in side in the classroom for example especially with listening eee and speaking as well. We restart activities in the classroom and then for the weaker students they can go over for the same activities in their own times at home.''*

Interviewee 3:

> *"Ammm I think that students can hear themselves talking instantly they record then they watch it they can watch themselves and listen to their performance and there is no delay… instant ratifications they can tell straight away how good they were and how bad they were.. in that way the iPad is really good and everybody can use it the youngest kids know how to use iPads how to record their voice it is very good and easy to use generally it is very effective."*

Interviewee 6M:

> *"then they did have an exam in writing not in the iPad not at all in the iPad so..they get them to use the iPad all towards the end of the year then they give them the exam or quizzes in written … aaa there is a gap between instruction and assessment because some of my students they can't physically hold the pen anymore because they used to typing and swiping screen all the*

*time following the screen but they can't actually hold a pen .. they can't write on a straight line that is from the start to the end right that is the problem exactly with the iPads."*

As for the specific benefits of the iPad in teaching oral and listening skills, the respondents were very specific on the realised benefits. This is probably due to the fact that M-learning is still a new concept in UAE and teachers are yet to see discernible benefits. Nevertheless, two main issues have emerged from the respondents. First, the iPad has brought about interactivity which significantly enhanced congruent opportunities. According to Interviewee 1, self-recording and playback provides an opportunity for students to get instant feedback which enhances the learning experience. Similarly, Interviewee 3 reiterates the same point stating that instant feedback positively impacts student oral practices and thus enhances their learning. Basically, iPads increases the effectiveness of oral and listening lessons.

However, Interviewee 3M shared an opinion to the contrary. Interviewee 3 decries the diminishing traditional skills of writing; to him, students have become overly used to the iPad which has gradually undermined their writing skills. Nevertheless, he does not state whether diminishing writing skills have undermined oral and listening skills.

The issues of instant feedback, collaboration, individualised learning and reduced student-teacher distance have been mentioned widely in previous M-learning studies. In a study by Ayala and Castillo (2008), it was established that M-learning and e-learning in general have reduced teacher-learner distance even as it has enhanced learning experiences. A host of other studies by Barretto (2003), Hui et al. (2005) and Martin-Blas and Serrano-Fernandez (2009) have also generally reported the same conclusions. In essence, training oral and listening skills require both practice and feedback which conventional training approaches offer limited options on. The iPad makes it possible for learners to practice and assess their performance. At the same time, it makes it possible for student to seek feedback from the teacher making learning more

individualised and highly effective. It has radically transformed the learning context and associated student teacher engagement.

### 4.4.5. What are the obstacles of iPad implementation in STS?

E-learning, M-learning and the use of iPads as the primary devices of teaching are relatively novel phenomena. The technology is still new and a significant aspect of it is exactly tailored for educational purposes. IPads are yet to become fully mainstream; even in the business context, adoption is still at the early stages. In the educational context where pedagogy and infrastructural issues remain a challenge, implementation of the iPad faced even greater obstacles. Therefore, the researcher sought to collect data on some of the specific challenges undermining the implementation of the iPad in STS in terms of infrastructure and also at the pedagogical level. The following excerpts highlight the most prevalent challenges.

Interviewee 1:

> *"I would say mostly distraction. It is a distraction for some students who just want to play games and they find it very hard to be doing something in the iPad and listening to the teacher at the same time"*

Interviewee 2:

> *"The biggest obstacle is that for students who are not interested or engaged it becomes a distraction to them."*

Interviewee 5M:

> *"Too much freedom is given to the students on the iPad too much freedom.. they are allowed to take the iPad home the analogy behind it that they have got homework and they need to take the iPad home to do their homework … but if the student were not allowed to take the iPad home then we will give them different kind of homework which does not require an iPad they have the iPad for too long and when they take it home they start to download other things*

*games so when they come to school the game they were playing last night they still playing it you know and they tell their friends about it oh that is a great game and before you know there is more games on the iPad than educational Apps so you really need to control the exposure to the iPad."*

Interviewee 4:

*"It is more often used as toy than a tool"*

The above excerpts singularly show that engagement and commitment to educational goals on the part of the students remains one of the major obstacles to iPad use. According to Interviewee 1, availability of games is a major source of distraction to learners. Interviewee 2 mentions the lack of engagement on the part of some students leads to distraction. A similar sentiment has also been expressed by Interviewee 4 who is of the opinion that students consider iPads more as toys and less as learning devices. Interviewee 5M decries the excessive freedom that iPads give to students. According to Interview 5M, iPads distract and spread distraction to other students. In sum, for most teachers and curriculum specialists the main obstacle is distraction.

A number of previous studies have also reported on the issue of student engagement with iPads and other M-learning devices. Kobie (2011) decried the idea that most institutions were "jumping onto the iPad bandwagon" without taking into consideration issues of applicability and practicality from the point of view of pedagogy. Nevertheless, the issue of engagement ignores the fact that play is a critical aspect of learning.

### 4.4.6. How do you describe your experience in teaching with iPad?

Teaching experience with iPad under M-learning programs provides a view into what is happening and the challenges that teachers are facing. This section reviews experience perspectives from practitioners especially when it comes to class control and implementation of pedagogy.

Interviewee 1:

> *''Actually, this was my first year having students who use iPads instead of laptops emmm but I find the students are very well at using the iPads for everything than laptops so I have had no problems with them''*

Interviewee 2:

> *''It can be mix for the students who utilise the tool to the best of their abilities it is fantastic it is far above better than having a book and ..etc and for students who are not engaged and who do not want to learn, then it becomes negative in term of getting them to work in. ''*

Interviewee 3:

> *"Sometimes some class can be good but overall if the iPad wasn't there will be more teaching"*

Interviewee 4:

> *"Aaa do I mean it is I think it is just just aaa it depends on how it is used I think … there is so so many Apps and what not that figuring out the right ones and actually having the guidance or as a teacher it just takes a lot of time to figure out how tame the beast."*

The above excerpts reflect varied experiences and points of views from the participants. One of the aspects that have emerged is that students are by and large comfortable with iPads as gadgets and by extension as tools. According to Interviewee 1, students are more conversant with iPads than even with laptops. This is probably due to the growing transition from computers to mobile devices as primary gadgets of document creation and communication. The quality of familiarity is a key concept of Koole's theory of mobile learning. Device usability and ability to offer interactivity underpins the social aspect of iPads as mobile learning tools (Koole, 2009).

According to Interviewee 2, the utilisation of the iPad as a learning tool has yielded mixed results. Some students have been enabled through the iPad to achieve their best. However, this has only been possible for highly engaged students. For less engaged students, Interviewee 2 is

of the opinion that it has actually made things worse. Basically, for less engaged students, the iPad has deepened their disengagement and made it more difficult for teachers to control them. A similar opinion has also been expressed by Interviewee 3 who argues that without iPads there could be more learning going on. This is also a testament to the declining levels of engagement and diminishment in teacher control t produced by M-learning and mentioned by Kobie (2015). In essence, the iPad and M-learning have not necessarily benefited all students. Some students could actually be losing out on class learning opportunities.

According to Interviewee 4, the challenge with iPads and M-learning is actually with the richness of the ecosystem. Practitioners would expect that with a rich ecosystem of learning Apps, M-learning would be better. However, according to Interviewee 4 the rich ecosystem has actually made it more difficult for teachers and learners to identify the right Apps and utilise them accordingly. This is partly a problem with the newness of M-learning and partly an issue of pedagogy. Despite the various theoretical and empirical studies focusing on the benefits of interactive and socialized learning (Sharpless et al., 2005; Kumar et al., 2010), there are none on how learning and teachers should navigate the maze of learning Apps that are constantly being released into the ecosystem.

### 4.4.7. Do you think that iPad is an effective tool in developing students' oral and listening skills?

The use of the iPad in the development of oral and listening skills is the main objective of this study. This section focuses on this aspect, analysing interviewee responses on the efficacy of the iPad in teaching oral and listening skills.

Interviewee 1:

> *''Emm yes I would say it can be a bit restrictive in the Apps they can use for listening and speaking emm but it is quiet good yes ..for these skills.''*

Interviewee 2:

> *"Absolutely it has far more potential than any workbook or any paper based learning tools."*

Interviewee 3:

> *"For some tasks and not for everything just for some tasks so going back at the same thing the iPad should be given to them for the specific classes or specific lectures and then it should be removed they do not need it any more for the rest of the aaa the session they might not need it for the rest of the classes and whenever they need it, it can be provided, it is like needing a pen every day they use a pencil but whenever they need a pen teacher gives them a pen and they use it or if they need a calculator or sometimes they are given a calculator and they use it and then they give it back again, they do not always need a calculator same as the iPad they do not always need it."*

The excerpts above largely reflect a unanimous agreement with the idea that the iPad has overwhelmingly enhanced the learning of English oral and listening skills. According to Interviewee 1, the iPad has been quiet good for the development of oral and listening skills despite some of the restrictions. Interviewee 2 finds the iPad to be better than any workbook or paper based learning methods. Interviewee 3 also agrees; however, he is of the opinion that the iPad should be just a component of learning oral and listening skills. Therefore, he advocates for controlled use whereby the teacher allows for iPad use as needed on a case by case basis. One of the critical advantages of iPads as M-learning tools is their ability to provide reflection on speaking, listening, writing and reading. Basically, iPads have made it possible to achieve both stimulus and response on demand something that traditional learning approaches could not deliver. In this regard, this study echoes similar findings by Read and Roe (2013) and Csizer and

Kormos (2009) whose studies also concluded that ubiquitous interactivity provided by iPads and M-learning technologies significantly enhanced oral and listening skills.

The sentiments expressed by Interviewee 3 underlie the challenge of pedagogy when it comes to M-learning and iPad use in learning. Pedagogy is yet to outline the place and role of the iPad and M-learning in teaching and learning. Teachers have to innovate and establish best practice through trial and error. Previous studies by Bennett (2011), Brindley et al., (2009) and Gong and Wallace (2012) also mentioned issues to do with pedagogical gaps that are undermining the efficacy of iPads as M-learning tools.

### 4.4.8. Based on your experience, what strategies/ practices do you use to teach oral and listening skills?

This section extends teacher experience outlined in the previous section and analyses data collected on strategies used by teachers to teach oral and listening skills. It reviews some of these strategies gathered from practice and also from engagement with colleagues and literature.

Interviewee 1:

> *''Emm we go through er once I give them instructions on a specific task we do an example together and then I usually pair them up in twos so one of them uses their IPad for videotaping emm so they have a look at themselves with video and audio and then they playback and then they have to redo it again depending on the points that they need to correct.''*

Interviewee 4:

> *''aa…aaa.. my strategies for oral and listening skills a… are I mean I tend to a… I mean we have for using the iPad I mean they have to have the right you know it is a form of scaffolding for the students who are able to…. I mean I use the iPad so much just as tool to get information to them and so using listening skills I just find the iPad useful in theory with the listening skills because it is its they are more able to closely listen then to things you know in the classroom just trying to get everyone on page to make sure they have listened to the appropriate stuff the appropriate*

*text a…a is rather difficult and so in theory the iPad you know make better use of the classrooms' audio space.''*

The above excerpts represent the majority of the prevailing strategies as expressed by the participants. Most of the teachers leverage on the playback capability and the individualised nature of iPads as critical elements in their strategies for teaching listening and oral skills. For Interviewee 1, he provides an example for all students, after which they are paired using videotaping Apps and listen to each other. A similar approach is also broadly employed by Interviewee 4.

In terms of teaching listening and oral skills, the strategies are largely premised on the social constructivist theories of learning as outlined in Koole's Frame of Mobile Learning (Koole, 2009). It also borrows from behaviourist theories whereby the process of learning is enhanced through stimulus and response (Hinkel, 2012). Essentially, there is the aspect of socialised interactivity in the recording of each other. Secondly, there is the process of discovery as students engage themselves with self-recording and listening Apps. Previous studies by Cavus and Ibrahim (2009) and Helmke (2010) have also shown that participation and collaboration are essential in learning. In this regards, iPad and M-learning have made it possible to fully realise the social constructivist and behaviourist theories of learning.

### 4.4.9. How do you see iPad as a mobile device in the future of UAE vocational education?

After outlining their experiences and strategies for using the iPad in teaching English language, this study also sought to understand how teachers viewed the future of the iPad in UAE vocational education.

Interviewee 1:

> *''I think it emm must play an important role because students now, there is a point to use such device if it may have many many uses if it is used properly''*

Interviewee 2:

> *''Well a a This is just where everything is going towards smaller and more compact devices and there are going to be more and more common places and students have great ease of using them and they become more and more universal''*

Interviewee 3:

> *''I .. I think it is going to stay it is going to be used more because it looks good there is a lot of potential to it but they really need to control how much exposure the kids have to the iPads, it needs to be controlled and it will be really effective they can take these home what do expect they are going to have games on it you know Instagram, facebook and everything so we shouldn't let them take them home.''*

In terms of the future of iPad and M-learning in vocational education, the respondents' views were unanimous. M-learning and the iPad will continue to be an integral element of vocational training. According to Interviewee 1 and Interviewee 2, iPad and M-learning has great potential in terms of the breadth and depth of use in educational contexts. For Interviewee 1, the only concern is that these devices need to be used appropriately. For Interviewee 2, M-learning devices will get better with time and their application for educational purposes will also increase and become more effective. According to Interviewee 3, the iPad has great educational potential; however, there is a need for greater control of exposure and limitation of social media applications such as Instagram and Facebook.

The general consensus based on the above excerpts is that M-learning and the iPad will continue to underpin the transformation of education. However, it has also emerged that there is still a

huge gap in terms of how M-learning and iPad use is to be structured in educational settings. Some practitioners would prefer greater use and wide proliferation of iPads and M-learning in educational settings. At the same time, some practitioners are of the opinion that iPads should be limited and used sparingly. In essence, most practitioners have largely failed to appreciate Koole's framework of socialised learning (Koole, 2009). Most of the practitioners who want iPad use to be restricted have failed to appreciate the value of the socialised learning journeys in improving and embedding learning in everyday learning (Vygotsky, 1978; Vadeboncoeur, 1997; Woo and Reeves, 2007). In some respects, the varied perspectives expressed by practitioners are reflective of the lack of pedagogical foundation for M-learning (Kobie, 2011). These findings serve to affirm Kobie's (2011) argument that most institutions and practitioners have basically jumped onto the iPad bandwagon without adequate in-depth investigation in terms of practicality and applicability.

### 4.4.10. What would you add to the context of iPad-based teaching to be best implemented in STS?

The previous section analysed the findings on current strategies employed by practitioners and their views on the future of the iPad in educational settings. This section analyses findings on practitioners' opinions on improving the contexts of iPad-based teaching in STS.

Interviewee 1:

> ''*Emm videotaping, aaa an audio and voice recognition playback and all these things*.''

Interviewee 2:

> *''In my opinion I would limit what these students are able to put on to it. I think it will be better if the administration willing to control what students are able to load into it for example new games as those which are distractive elements so if they could limit their internet use and their Apps that can be great help.''*

Interviewee 3:

> *"Ammm there is something we call aa flipping the classroom where instead of the teacher teaching you try to and teach where the students teach each other and then they actually use the iPad similar to the example I gave I was using the camera to show what I was doing so what then they have to do they have to use their iPads and record how they were disassembling a processor or removing a memory or removing a hard drive and they would record it because I don't have a time to go and look at everyone so they record what they did sent me the recording and I can sit and watch how yet he did right and he did wrong it was like a recorded footage of what they did also when they went home they can revise from the video they can hear me speaking in the background and they can see what we were doing so they physically didn't need to have to take the computer home they just need to see the video and remember everything of what they were doing so there are ways of … of utilizing an iPad but you really got to think about it "*

Interviewee 4:

> *"Oh a… I think a. there needs to be a appropriate software in order to ensure that all students are on a..a on .. a on pace you know thing help in like ear pods, websites you know to make sure that get through a certain degree of curriculum and make sure they have learned it you know there are also other websites or .. or Apps where you once turn off the wifi you already get the attention of use what they use make sure you know to coral the students with the iPads because their connections to information so I think a… just having greater access of over side of what students can do in the classroom I think is important "*

The excerpts above largely echo some of the issues that have been highlighted in the previous sections. Interviewee 1 advocates greater self-directed learning powered by increased device capability in the form of voice recognition and better playback capabilities. Interviewee 2 advocates for greater teacher control and restrictive use of iPad Apps and the Internet. Interviewee 3 advocates enhanced collaboration amongst students and also between them and the teacher. He also advocates enhanced remote learning where the students are able to access feedback ubiquitously. Basically, for Interviewee 3 M-learning and iPad use needs to be

deepened and broadened to improve levels of engagement and enhance the ability of the teacher to offer feedback. For Interviewee 4, control, curriculum and pedagogy are the major areas in need of improvement. Interviewee 4 seems to be cognizant of the gap between technology and curriculum and pedagogy. There is a need to align the three in order to optimise educational outcomes.

Collaboration is the hallmark of M-learning as powered by the iPad. The promise of collaboration, socialised learning, and higher levels of collaboration are the main selling points of M-learning. However, the findings of this study shows that to some extent, hardware and infrastructural shortcomings continue to be a challenge. Teachers and students are yet to realise a deeper level of collaboration to enable them to fully harness the power of iPads and M-learning. In this regard, the findings of this study reflect that of Godwin-Jones (2011) whose study concluded that more innovation will be needed to fully harness the power of mobile devices. Issues of discipline whereby teachers desire more control are basically manifestations of pedagogical and curriculum failures. Most teachers are still experimenting and there is lack of structure in how M-learning and the iPad are driving learning. Previous studies by Senior (2010) and Kobie (2011) also reported similar conclusions

### 4.4.11. What are the most frequently used apps in your teaching of the oral and listening skills?

One of the issues that have clearly emerged in this study is that there numerous educational Apps for the same and varied functions. The researcher anticipated with a rich ecosystem for educational Apps, teachers and student would be spoilt for choice. However, this rich ecosystem has actually been counterproductive in the sense that teacher and learners need lengthy coaching

in learning to identity and use diverse applications. In this regard, the researcher sought to collect data on the most frequently used Apps in teaching oral and listening skills.

Interviewee 3:

> *"I've been using quite a lot mmm Showbie is brilliant showbie allows you to be totally paperless amm I can get them home work instantly on the showbie and it doesn't matter where in the world they are even if they are absent they will receive the homework in their showbie I will know that they have not done it because they haven't posted their answers on the showbie other Apps I use is type on PDF you can give them any PDF sheet in the iPad and they can write on it and then send you back their answers we use a program called cohort and cohort .com it allows me to give them like a small puzzle type games where they solve in the puzzle but they also learning they choose sliding the words to the right picture ..etc other Apps emm there is an audio recorder that we use oo it allows them to record audio and visual it allows you to manipulate the sound so they can change their voice so they still do the work but they can make the voice sounds different and makes it fun but gets the work done as well emm and keynotes is really good they all had lessons on how to use it. Keynotes is similar to PowerPoint and with a lot extra more features you know they can use that to their benefits and I movie for visual and audio learning and all learning and I videos is brilliant they can go make their own movies edit it very quickly and give me a finish product very addictive "*

In term of most favourite Apps, the findings of this study show that there is still a high level of fragmentation. Most practitioners were still largely rummaging through the ecosystem and learning via trial and error and also from peers which Apps were the most effective. The above excerpt from Interviewee 3 reflects what most practitioners are looking for in an App. For this particular respondent, operating paperless and ability to engage remotely are essential. In the teaching of oral and listening skills, the majority of participants seem to favour Showbie primarily because of these features. It offers robust collaboration and instant feedback capabilities which are critical to the learning of oral and listening skills. Previous studies by Illeris (2008) and Koole (2009) have also emphasized the power of ubiquitous interactivity in

powering learning. This study affirms the theoretical foundations provided by these studies that interactivity and ability to engage with others and learn from anywhere will empower learning.

### 4.5. Observations

Observation was one of the strategies that the researcher used to collect data. Observation was primarily used to assess the efficacy of the iPad as an M-learning tool in teaching listening and speaking. Two class activities with various apps were observed. In this case, the strategy was to gather data on how varied apps were used to teach both listening and speaking of English. In the course of the observations, the researcher maintained a record of all the activities taking place. Afterwards, the researcher reflected on the observed activities in terms of their suitability and efficacy in achieving tutor objectives. The following sections present: the observed phases, apps that were in use, the context of use and the subsequent reflection.

#### 4.5.1. Observation Phase I

As mentioned in the previous chapter, the first phase of the observation figure 28 below was devoted to orientate the observer with the setting and to impart a natural atmosphere for the upcoming phases of observation. Within this phase, the observer became familiar with the learners as well as the instructors. On the other hand, students were accustomed to the observer's presence which helps in yielding valid and reliable data from the observed context.

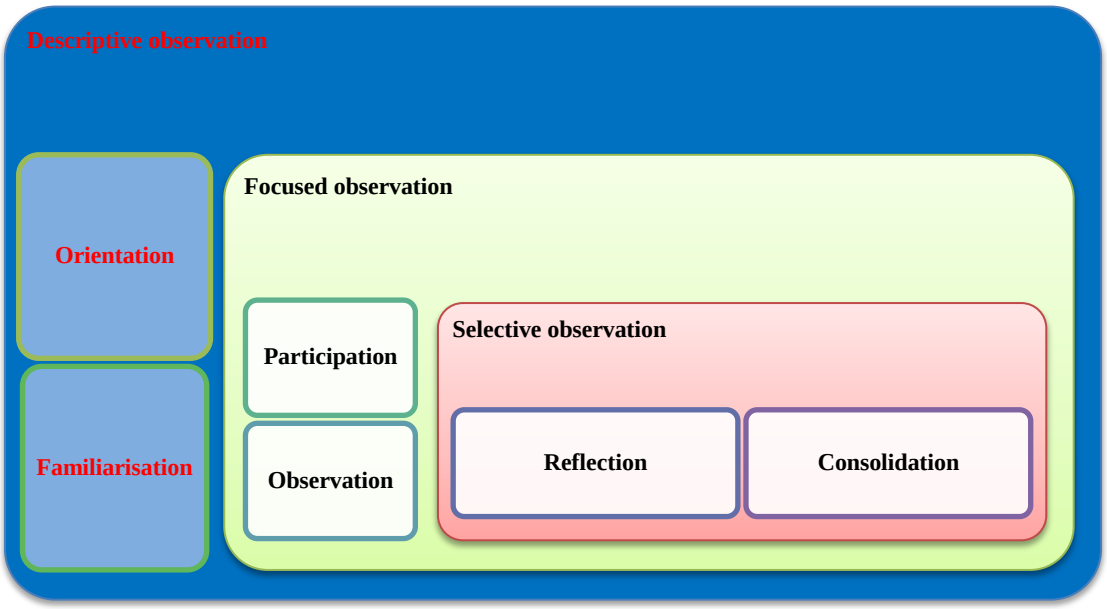


**Figure 13: Phase I of Participant Observation Spradley (1980)**

In this phase, as called the descriptive observation, Spradley (1980) states that despite not necessarily providing essential data, it paves the way for a rich data source for the coming two phases. Significantly, the observer validates some of the interview questions as well as the focus groups discussion claims. There was a solid ICT infrastructure. The M-learning ecosystem was in place. Every classroom was well-equipped with the needed devices, wires and portable chargers for the iPads in case they ran out of charge. During this phase, the observer met the teachers and discussed with them their instructional plans and took some 'learning walks' to alleviate any uneasiness or anxiety amongst the learners. More importantly, to avoid any Hawthorne effect, the observer assured the participants that their confidentiality would be maintained. According to McBride (2013) this might eliminate some of the effects of this source of bias.

### 4.5.2. Observation Phase II

In this phase, as shown in figure 29 below, the observer presents the reflection for the first observation session. The observation phase took a span of 45 minutes. The aim was to collect

data on the efficacy of various M-learning apps in developing listening, speaking and both skills. For this focused observation, the activity under observation was an argumentative discourse.

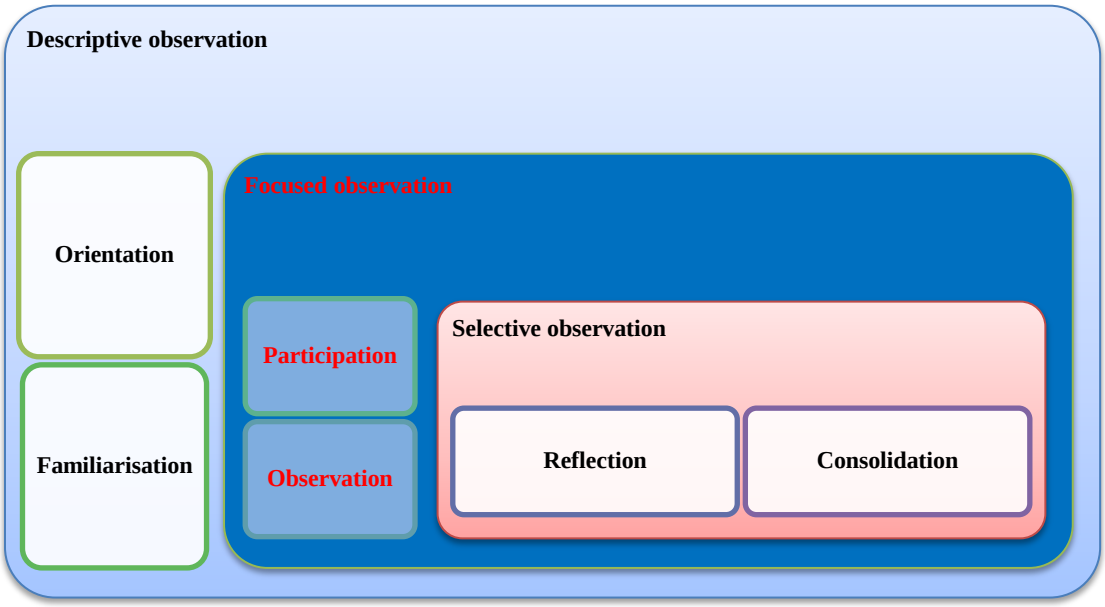


**Figure 14: Phase II of Participant Observation Spradley (1980)**

The following are the key observations that the researcher made:

1. Technological integration of virtual learning environments.
2. Example sessions led by the teacher
3. Teacher-students, teacher-device, students-device
4. Extension of learning to a later time (ubiquity)
5. Role play (argumentation)

The observation sessions were essentially an embodiment of the social constructivist theory of learning as outlined by Vygostky (1978). Activities and involvement underpinned the learning episodes. The teacher provided the direction. This was then followed by engagement amongst the students and finally feedback sessions with teacher and from amongst the students. This session represented the ultimate vision of the social constructivist theorist. In this phase the researcher as an observer tries to situate the activities and the classroom dynamisms within the theoretical framework of this thesis study. It is mentioned in the theoretical framework chapter

that the social constructivist theoretical framework (Vygotsky 1978; Browne & Campione 1996) underlies the three theories of Connectivism (Siemens, 2004), Activity Theory (Engestrom 1987) and Conversation theory (Pask 1975). It is assured that the theory of Connectivism aims at the "amplification of learning, knowledge and understanding through the extension of a personal network" (Siemens 2004, p.12), whereas the Activity Theory supports the idea that "learners produce cognitive tools through social interactions resulting from the cultural environment produced by an activity system" (Jonassen 2000, p.35). The findings of the observation show the three theories in action and how they power the learning process. Hereafter, the articulation and the analysis of the findings of this phase is explained based on the social constructivist framework including the three theories as well as the selected model (Koole 2009).

Initially, the Activity Theory was profoundly enmeshed in the instructional plan of the observed activities. As stated in the literature review chapter Activity Theory is composed of subject, object, actions, and operations (Leont'ev 1974). Besides, these are the aspects that are in accord with Koole's (2009) model. They were the basic elements observed in the focused observation. In her explanation of Activity Theory, Nardi (1996) introduces the main concepts of this theory as a goal-directed action to accomplish an object which can be attained by more than one action. Thus, it is worth repeating figure 1 from the literature review to explain more how the observed activities are designed based on the Activity Theory.

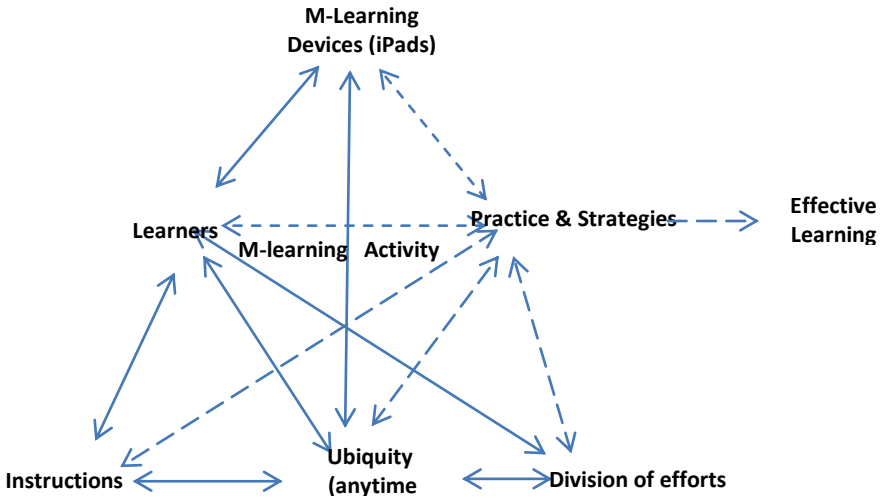


**Figure 15: Activity Theory Application in M-learning**

To explain the above figure in concomitant with the setting of the observation, it is clear that the instructions were given ubiquitously. That is to say, students were given the task even before they came to the class. So, once they get in, they knew exactly what to do. Concerning this, it has to do with classroom management and building the norms of the class. It is also seen that the teacher is aware of the flipped learning strategy as he gave the students the learning intentions beforehand. Through the pace of the learning process, it is noteworthy that the learners have various interactions. The straight double arrows represent the initial interaction. According to Koole's (2009) model, there was interaction between the learners and the different aspect of the M-learning activity. Using the iPad while at home to receive teacher predetermined instructions, learners have three kinds of interactions: interaction with the iPad, with the social context and with the instructions themselves as well as their effort is indicated here. Although there was an interaction during the class, the learners could not have certain strategies to achieve effective learning which is represented by the lined arrows. However, they practice to have a strategy.

The findings of the focused observation indicated that sometimes learners use the iPad per se as a strategy to practice listening and to assimilate the model native speaker's utterances. One of the

iPad apps that was effective in developing speaking and listening skills was observed to be 'Speaking Pal'. Students were observed using this app to listen to a conversation between two or more native English speakers then they, in the first stage, try to take the role of one of them subsequently the app records their responses with a level of competency that is represented in three different colours (green for the correct utterance, yellow for the intermediate and red for the weak) which gives room for the learners to assimilate and adjust the utterance till it reaches a kind of similarity to the original utterance. In Figure31 below, the four combined pictures demonstrate this process clearly.

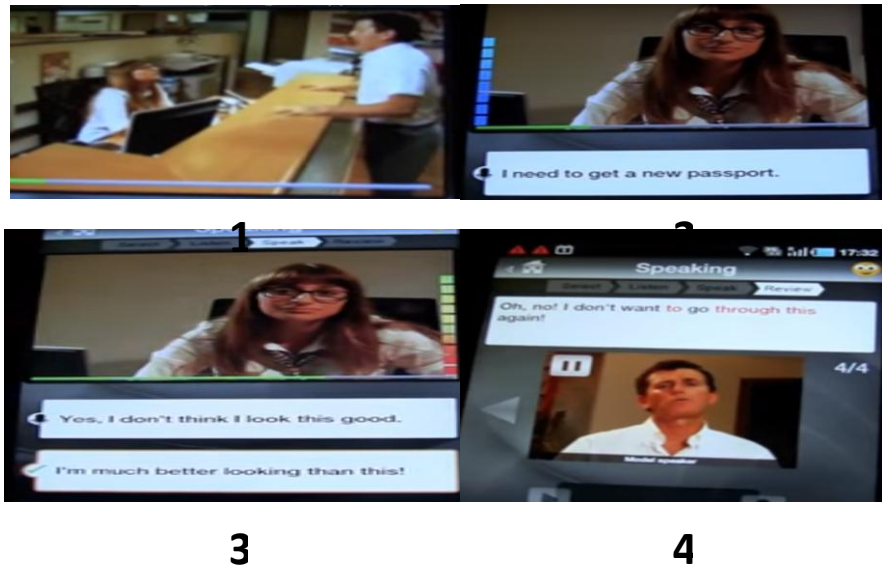


**Figure 16: Speaking Pal oral and listening activity**

### 4.5.3. Observation Phase III

As stated in the methodology chapter, the observation is extended into 6 intervals. To explain, excluding the first phase from the 6 observations, every other observation consists of three intervals. Thus, the third phase of the observation focused on language functions. The observed activity was making of a phone call. The activity lasted for a period of 45 minutes. As in the previous case, the objective was to gather data on the efficacy of M-learning apps in teaching

listening and speaking. Similarly, the strategy was to detail the context of use and reflect on the efficacy of use. Figure 32 below show the third phase: selective observation.

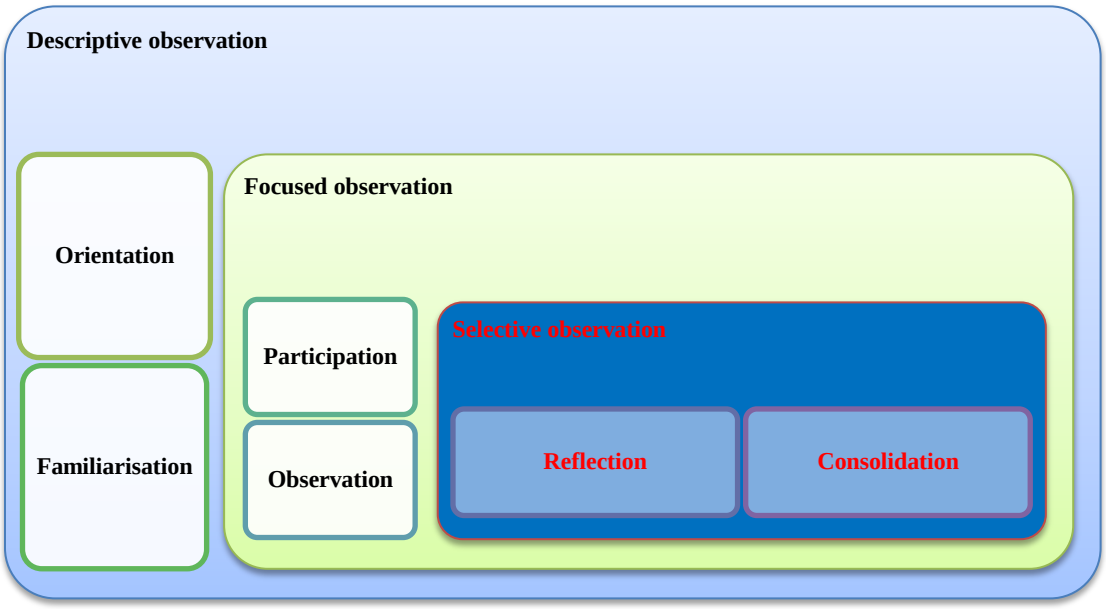


**Figure 17: Phase III of Participant Observation Spradley (1980)**

The figure above is the selective observation. It presents the third observation. This particular observation session was selected primarily because it focused on self-directed learning whereby students were to create their own dialogue. The following are some of the main elements of the selective observation:

1. Formation of Groups (collaboration)
2. Interactive support amongst learners
3. Skills integration
4. Freedom to choose desirable apps

This particular session applied the PPP approach. Learners went through the three phases of presentation (here it is about the dialogue which is designed using the iPads) the practice (the use of these skills by other learners and finally the production (the final version of the app's

production of the dialogue) which is encouraged by the teacher to disseminate to other groups. Assimilating the authenticity of the daily natural conversation is one of the principles of social constructivism underlying the framework of this study. Thus applying these iPad apps in their authentic situations will lead to smooth acquisition of the intended skills which are listening and speaking. The use of different apps signifies the development of higher thinking orders enhancing synthesis as envisioned by Blooms Taxonomy implementation.

Based on Spradley's (1980) conventions, selective observation is when the researcher goes back to the setting of the study to look for evidence and practices to support the second phase. To expatiate, table 22 and figure 33 below present the main keys for the observation checklist. These keys were used to follow up the main findings of the selective observation.

| Description: | Reflection: |
|---|---|
| [I]- If the activity can be better completed using iPad | [R(1-5)] the level of performance |
| [W]- If the activity can be completed without the iPad | [F(1-5)] the level of fluency |
| [S (1-5m)]- Time spent on the activity | [A(1-5)] the level of accuracy |
| [S_S (INT)]- Student-student interaction | [IP(1-5)] the level of iPad use |
| [S_T (INT)]- Student-teacher interaction | |
| [S_I (INT)]- Student-iPad interaction | |

**Table 21: Observation Checklist keys**

The above table lists the keys by which the following chart in Figure: 19 below is understood. These keys summarise the holistic view of the different kinds of interaction, the fluency,

accuracy and the overall performance during the activity. Besides, it indicates the level of iPad use and whether the activity can be best completed with or without the use of it. It also presents the time spent on the activity. The selected 20 minutes from each interval are decided on due to the precision of the findings. All these indicators are judged against different measurement techniques.

To measure the three given aspects of performance during the observation, the percentage of error-free utterances or the number of errors per a certain number of words was used to measure accuracy (Ellis and Barkhuzen 2005). This kind of measurement is used because of the simplicity of coding the utterances as t-units. Moreover, the speech unit analysis is the most feasible in this context as Foster, et al (2000) stated that Speech Unit analysis can be consistently and reliably applied to an oral data set. As for the fluency, despite the low viability of the inter-rater technique, the researcher opts for it as the aim of this study is to reach a holistic view of the oral components rather than precise measurements.

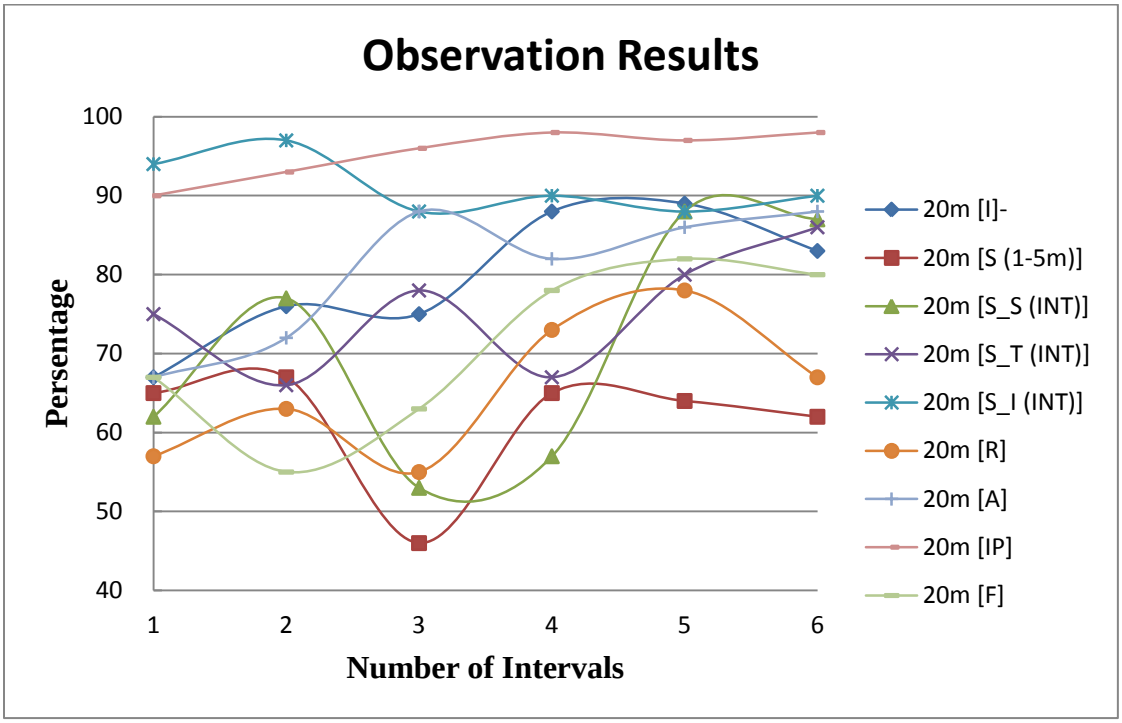


**Figure 18: Selective Observation Analysis**

Based on figure 19 above, the researcher aims to gather more focused and supportive evidence to add to the previous observation data. As the observed sessions are inclined to be learner-centered, the observation then focused on the listen keys in the table which are mainly about the interactions between the aspects of M-learning environment. Furthermore, the indicators that signal the accuracy, fluency and performance in general are observed and represented in figure 19 above. The allotted time span is 20 minutes each to decide the indicated keys in table 22 above.

It is unequivocally clear from the line chart above that most of the indicators are settled at the end of the six intervals. Significantly, the level of iPad use started high and maintained the same level. This can be explained by the fact that the iPad is the core tool in the processes of learning and interaction starting from the initial instruction up to forming groups and ending up with the presentation part. More interestingly, that the iPad use goes hand in hand with the students-iPad

interaction then they both settle in at the end which seems reasonable and justifiable as well. Peculiarly, the time spent on the activity as well as the level of performance starts to fluctuate from the first beginning this might be due to either the students deviating from the original task or because they look for suitable apps and strategies to practice and master their task so that they can present it proficiently afterwards.

Student-student interactions and student-teacher interaction were moving side by side with less in the middle intervals for student- student interactions. Although it was a technology integrated student-centered learning environment, still students recur to their teacher for more explanation or consultation about their tasks. As for the two indicators of accuracy and fluency, they started from the same point acclivitous to the end of the observation phase. The only explanation for this is that the more students use the iPad the better accuracy and fluency they attain within the same task. Concluding the observation, it is noteworthy that whether the activity is completed better with the iPad or not, it can be seen that students start using the iPad heavily towards the end which is fits well as they aim to prepare for their final production and present it.

### 4.6. Research Questions

The previous sections have presented the findings from the multiple research methods that were used. This section reflects upon the research questions of this study and outlines the extent to which this study answered them.

#### 4.6.1. Research Question 1

The first research question was: What are the STS students' perceptions on their readiness to implement the iPad as an M-learning device in their learning process? This question was mainly focused on three main areas of: existence of adequate infrastructure to enable M-learning, adequate training of teachers to deliver on training, ability for students to effectively and

appropriately use iPad and M-learning technologies to learn. The findings of this study show that there is an adequate infrastructure in terms of hardware and internet to power M-learning. On teacher training, the results are mixed. The findings of this study show that teachers primarily received adequate training on technical aspects; but pedagogical training is largely lacking undermining the ability of teachers to effectively deliver the curriculum. On the part of student, familiarity and competence levels are high. This necessary means that they are ready and comfortable when it comes to the use of iPad in M-learning.

### 4.6.2. Research Question 2

The second research question of this study was: What are the STS stakeholders' perceptions on iPads' suitability as M-learning devices for teaching English in STS schools in UAE? This question extends the first question of readiness and seeks to determine whether iPads are suitable M-learning devices in the teaching of English in STS schools.

The findings of this study show that majority of the teachers agree that there has been some training on the use of iPad as an instructional tool. However, there is also a consensus that the training was largely basic and limited to technicalities. In essence, as a technological device iPad is suitable for teaching. However, when it comes to delivering curriculum in a pedagogically sound manner, iPad might not be a suitable instructional tool. How are teachers supposed to implement pedagogy via iPads without pedagogical training on the same? The lack of pedagogical training concerning the use of M-learning in teaching English language is a major source of weakness. Overall, the suitability of iPad as an instructional tool is supported by the adequate infrastructure to facilitate the M-learning in UAE schools.

Technical training has also contributed positively to teacher performance. Finally, the suitability of iPad is supported by its overall effectiveness. M-learning and iPad has made it possible for

students to remotely engage with each other and with teachers about class work and other activities that enhance learning. This has made learning ubiquitous and more socialized.

### 4.6.3. Research Question 3

The third research question for this study was: What iPad strategies do students employ to develop their oral and listening skills? The findings of this study show that M-learning is premised on learner's individual willingness for cognitive engagement in M-learning activities. In terms of enabling oral and listening skills, the findings of this study overwhelming show that iPad enhances the learning of English language. It has made it possible to self- record, listen and share with fellow classmates and teachers which have significantly enhanced the development of oral and listening skills. Allowing students to record themselves and play the recordings back is the best strategy for teaching speaking and listening skills. At the same time, the visualization and engagement offered by M-learning that enhances the efficiency of teaching speaking and listening skills. Other strategies that this study has identified include:

1. Collaboration: the collaborative is also an important aspect in the teaching of language skills.
2. Personalized: learning the individualized nature of iPad powered learning as important in enhancing listening skills
3. Near-instant feedback: the issues of instant feedback and collaboration learning and reduced student-teacher distance have been mentioned widely in previous M-learning studies

### 4.6.4. Research Question 4

The fourth research question that this study sought to answer is: What iPad teaching practices do teachers use to develop STS students' oral and listening skills? In this regard, the findings of this study are as follows. First, teachers leverage on the playback capability and the individualized

nature of iPads as critical elements in their strategies for teaching listening and oral skills. Secondly, interactivity and collaboration is widely used in teaching oral and listening skills. Students are paired to videotape and listen to each other. This creates and enhances a process of discovery as students engage themselves with self-recording and listening apps. In sum, participant and engagement is foundation for teaching oral and listening skills with the help of iPad and M-learning apps.

# Chapter Five

## Discussion

### 5.1. Introduction

The previous chapter presented and analyzed the findings of this study. This chapter elaborates further on these findings by placing them in the context of previous studies and Koole's theoretical framework. It also reviews the implications of these findings in practice and offers recommendations for policy makers and practitioners. This chapter is organized into four main sections. The first section discusses the findings of the study. The second section offers recommendations. The third section outlines the limitations of this study and suggests areas for future research. The last section provides a summary for the chapter.

### 5. 2. Discussion

One of the main issues that this study sought to investigate was teacher and student training. Training is a critical element in the successful implementation of M-learning. On the part of teachers, training is what equips them with tools for delivering curriculum successfully. For students, training provides the knowledge required to enable them to learn effectively via M-learning technologies. The Conversational Framework developed by Laurillard (2002) posits that learners and teachers are expected to demonstrate an understanding of M-learning models and M-learning components in order to be able to facilitate learning through M-learning. Basically, M-learning succeeds when both learners and teachers are technically and pedagogically competent in M-learning.

In the case of the UAE's implementation of M-learning, the authorities have invested considerably in training. Most teachers and students agree that training was provided. However, this training was largely limited to technical aspects of M-learning. Teachers were only taught how to use the devices and be able to deliver a lesson with them comfortably and effectively. On Pedagogy, there was no training at all. Teachers are expected to adapt conventional approaches in pedagogy to M-learning. This entailed innovating lesson delivery in accordance with available applications and learning contexts. Previous studies have advocated innovating pedagogy. Cavus and Ibrahim (2009) argue that the innovation of pedagogy is aptly suited for individualized learning. In this regard, teachers deliver lessons taking into account varied learning techniques and the pace of their students. Similarly, Gobel and Helmke (2010) argue that the adaptation of pedagogy is ideal for self-directed learning as it enhances assimilation of new knowledge.

In the case of the UAE, most teachers are in support of pedagogical adaptation and peer-learning. According to them, M-learning provides an opportunity to innovate in relation to lesson delivery. In essence, M-learning has provided the perfect opportunity to put into practice Koole's social constructivist framework. M-learning makes ubiquitous learning possible. Nevertheless, according to Biggs (1999), adequate training equips both students and teachers with deep in-built strategies for optimizing the learning opportunities provided by M-learning. Therefore, as M-learning become mature, pedagogical training on M-learning methods and approaches needs to be incorporated into teacher training curriculums. This is essential as teachers should be more familiar with best practice and also pitfalls associated with M-learning.

This study also investigated the existence of M-learning infrastructure and its efficacy in enabling M-learning. A previous study by Sharples (2000) established that the power of M-learning lies in the existence of a networked community. That brings and students and educators

together empower collaboration amongst teachers and between teachers and their students (Serrano-Fernandez, 2009). In the case of the UAE, most respondents have overwhelmingly indicated that there is adequate infrastructure in technology to power M-learning. The ubiquitous character of M-learning in the UAE is largely a factor of adequate communication infrastructure in schools and also in the UAE overall. For example, when it comes to identification of appropriate M-learning applications, recommendation from peers is the most important source of best practice. In reference to Koole's Frame for Mobile Learning (Koole, 2009), the existence of a networked community of educators and learners underpins the interactivity and socialized nature of M-learning which makes it a powerful tool for continuous learning. In essence, adequate infrastructure makes it possible to interact and socialize which activities according to Koole's Framework of mobile learning are critical to the efficacy of the iPad and enhancing knowledge acquisition.

Student's responses to the questionnaires also supported that having the iPad changed the way that they interacted in class and with the instructor. Instead of having to schedule a computer lab or go to the library to look for information, the researcher and other faculty found that data was available instantly in the classroom. Group work became more efficient and more convenient. Instructors indicate that they would break up for short 10-minute group work assignments that utilised the iPad to do research. This would not be possible if the class needed to move to a computer lab to access the Internet.

The iPad also allowed the instructors to use a wider variety of media. Instead of just assigning readings, with the iPad, video and web-based resources could be assigned for review before the next class period. Again, it was found that the easier the instructor made it for them to find and access this material the better. Students were enthusiastic about the use of Blackboard because of

the ease of access to material, but were disappointed with its limitations such as not being able to complete assignments using a mobile device. Student participants wanted their mobile version of Blackboard to do everything that they needed to do. They did not want to sit at a desk and use a desktop or laptop computer. The future of Learning Management Systems (LMS) will be mobile and app based rather than web based

Mobile devices and web 2.0 applications have great potential in the classroom. However, for it to meet its potential, classroom pedagogy will need to evolve. IT and Academic Technology professionals need to understand that it is no longer just about making technology available and offering support, but in helping teachers to evolve their pedagogical beliefs. Demanding that students not use laptops, phones and iPads is going to become more and more impractical and even unintuitive for coming generations. We cannot continue to use 20th (and even 19th) century pedagogical methods in a 21st century learning environment. The "App" will become the new way to deliver information quickly and efficiently. We are already seeing Schools, Universities and even individual classes and instructors having their own personal "Apps" to deliver relevant information quickly and efficiently. It is no longer just sufficient to have a webpage or to use a course management system such as Blackboard or Moodle. Those resources will need to become mobile. Students want to do everything on their phone or pad device rather than on a laptop or desktop computer.

The findings of this small study indicate that mobile devices can easily be incorporated into the classroom with a minimum of effort. However, it is the attitudes and pedagogical ideas of the teachers that will need to change to accommodate how the next generation sees their world and how they want to learn about it. By 2025, we will have children that have grown up never

knowing a time when they did not have mobile devices with instant access to information. We must be prepared.

The iPad's interface design has been shown to afford intuitive use by even the youngest of users, and this, combined with its range of applications (including games and entertainment) will no doubt appeal to those learners who are already immersed in technology. However, the iPad also potentially holds significant implications for informal, 'found' learning (Johnson et al., 2010), and a move towards mobile computing using this device may serve to blur the distinction between formal and just in-time learning (Sharples, 2007, p.9), in a way that may lead to greater affirmation of learners' own knowledge and conceptual frameworks. Were the iPad to be ubiquitous in education, it might serve 'as a catalyst that could facilitate movement towards constructivist practices, where teachers act primarily as coaches' (Rockman cited in Mouza, 2008, paragraph 17).

Under this scenario, social knowledge construction could be fostered through collaboration, greater student autonomy in learning could pave the way for enhanced metacognition, and authentic, complex problems could be addressed in real-time environments (Herrington, Mantei, Herrington, Olney & Ferry, 2008). While the iPad offers both utility and productivity applications (for example, weather checking and iWorks), iPad apps developers working in educational fields are most likely to leverage more immersive applications 'that strengthen the user's sense of entering the world of the application. Users expect seeking and discovery to be part of the experience' (Bohle, 2010, paragraph 6). This could lend itself to more authentic and complex problem-solving applications, ideally suited to constructivist-referred learning experiences. Additionally, e-books could move textbook study into the arena of the interactive,

combining ‘the activities of acquiring, storing, reading, and annotating’ (Johnson et al., 2010, p. 6) with embedded video and gaming elements.

However, as m-learning begins to challenge the constraints of institutional pedagogy, the position and the role of the teachers in this process becomes increasingly important (Kress & Pachler, 2007). For iPads to be used in educationally effective ways there needs to be strategic and coherent support, particularly regarding “teachers’ [need for] high quality professional development” (Mouza, 2008, paragraph 17). With many students using some form of mobile device, cellular networks are being extended and an increasing number of educational staff are experimenting with the possibilities for collaboration and communication offered by mobile computing (Johnson et al., 2010). However, it cannot be assumed that teachers will automatically be able to use these devices in pedagogically innovative and appropriate ways. While there are many exemplars of prosaic uses of mobile devices for communication, few examples currently exist of how they might be used as cognitive tools to solve complex problems, and to engage students in authentic and meaningful tasks. (Herrington, Mantei, Herrington, Olney & Ferry, 2008, p. 1)

The findings of this thesis study support the two digital concepts of connectivity and convergence. The concepts of connectivity and convergence can be interpreted as both the literal connection to supporting infrastructure and peripherals, and the synchronous/asynchronous virtual connection to individuals, learning communities, and environments beyond the learner. The iPad’s applications should eventually afford a full range of asynchronous/ synchronous communications (with peripherals attached) that will allow students to create, share and connect with others in authentic learning situations, and to participate in online learning communities. However, such ubiquity of connectivity brings with it the ever-increasing need for digital

citizenship and information literacy skills, in order to navigate the challenges of what will become a much more accessible online environment. The 2010 Horizon Report noted that, with mobile computing on the near horizon, "sense-making and the ability to assess the credibility of information are paramount … digital media literacy continues its rise in importance as a key skill in every discipline and profession" (Johnson et al., 2010, p. 4). Some of the knowledge that students will need to construct will be how to make sense of the distributed and fluid world (Pachler, 2009). The challenge for educators will be to open security doors sufficiently to allow access to the full resources of the web, while at the same time, guiding, teaching and managing the challenges that more open and unfettered connection can bring

The main aim of this study was to determine the suitability of iPad and M-learning in teaching the English language. Learning language requires practice and useful feedback. The ability to practice continuously and receive feedback almost instantly is critical for students to know what is wrong and what is right. Previous studies by McCarty (2005) and by Bryan and Hegelheimer (2007) have both established that M-learning is an effective tool the language. The efficacy of M-learning in teaching language is down to a number of factors including: ubiquity, feedback, and collaboration. The findings of this study have largely echoed the findings of previous studies. It has shown that M-learning makes it easier to practice speaking and listening skills. At the same time, it makes it easier to receive feedback by listening, from fellow students and also from teachers. As a tool for self-directed learning, the iPad is an effective tool for learning the language. However, there is lack of best practice and teachers are often facing the challenge of control. Basically, the collaborative nature of the iPad and M-learning, the existence of multimedia and the need to deliver individualized learning can be overwhelming for instructors. Even though the lack of structure optimizes opportunities for individualized learning, it significantly undermines the ability of a teacher to effectively control the learning process.

Traditionally, teacher training provides the platform upon which teachers are trained on pedagogy. Naturally, the researcher expected that with the introduction of M-learning in UAE schools, training would encompass all aspects involved in learning contexts. In this regard, this study sought to evaluate whether the training provided had any impact on teacher and learner performance. Previous studies by Ayala and Castillo (2008) and Luis de Marcos (2006) have come to the conclusion that M-learning would enhance teacher performance and improve learning. The findings of this study show that M-learning is indeed transforming educational outcomes. However, positive learning outcomes have been undermined by technophobia and lack of pedagogical direction. This study has shown that teachers with higher levels of familiarity with technology tend to appreciate more its transformative power. In contrast, conservative teachers find M-learning to be disruptive. As a result, teacher performance is largely a factor of their appreciation of M-learning and their familiarity with the associated technologies.

In a study by Goundar (2011), it was established that the potential of M-learning can only be realized when there is competency across the board. Basically, teachers should be competent and so should students in order to ensure that M-learning actually yields the promised benefits. Another study by Godwin-Jones (2011) which specially focused on the efficacy of M-learning in teaching language also concluded that proper conceptualization of M-learning technologies is critical for its efficacy. The issue of competency has also been broadly highlighted in Koole's Frame for Mobile Learning (Koole, 2009). This is depicted in the aspect of device usability which is determined by the design of the device and the level of familiarity with the device by learners and teachers. In sum, the effectiveness of teachers in delivering M-learning is continuously going to be dependent on the depth of proliferation of these devices and teacher preparedness and familiarity with new emerging technologies

M-learning has achieved relatively wide adoption in the UAE. However, the findings of this study show that its potential is yet to be fully harnessed. Students surveyed in this study overwhelmingly agree that iPads and M-learning have made learning collaborative, engaging and ubiquitous. It has become possible to effectively learn from within the school contexts and also from outside the school environment. The aspect of collaboration and interactivity provided by M-learning has significantly enhanced opportunities for knowledge acquisition and dissemination. At the same time, more students are willing to learn with the aid of iPads and other M-learning devices. Nevertheless, this study has also established that M-learning has not necessarily made learning any easier. This reflects the inherent lack of structure and pedagogy that has characterized the deployment of M-learning in the UAE. Instructors are constantly experimenting with their approaches and delivery of learning via these devices. This constant experimentation means that there are lost opportunities for learning. However, it will take time before best practice can be established to serve as a reference point for all practitioners.

The lack of class and student control also emerged as one of challenges of M-learning. Most teachers were of the opinion that iPads resulted in some distraction and limited their control of classes and students. This is not a new issue. Previous studies have reported teachers having issues with control of their classes. A study by Han and Li (2010) defines the M-learning context as one where learners are in control of their learning. They also go further to state that the concept of M-learning is premised on learner's individual willingness to engage cognitively in M-learning activities. Essentially, the lack of control that most teachers decry is a fundamental tenet of M-learning. Basically, M-learning has in many ways democratized and individualized learning. The focus of learning has shifted from the teacher to the students. As such, the concept of teacher-control is reconceptualized.

According to Han and Li (2010), lack of teacher control is the basis upon which M-learning is founded and where its success springs forth from. However, this core aspect of M-learning is lost on most practitioners. Consequently, the issue of control is set to have broad implications for pedagogy. The introduction of iPads has made learning both social and individual; depending on contexts, M-learning can be mostly individual. In this regard, M-learning embodies the Piagetian theory of learning by creating a learning process that is largely centered on the student (Vadeboncoeur, 1997). Similarly, it represents Koole's Frame of Mobile Learning which envisions a learning context that is socialized, interactive and learner-directed.

This study also evaluated the issue of readiness when it comes to the implementation of iPad. M-learning readiness encapsulated varied aspects including: availability of infrastructure, teacher competence, and student willingness. On infrastructure and student willingness, the findings for this study have shown that the level of preparedness was adequate. However, on training there are many shortcomings. Formal education has for a long time been premised on the ability of teachers to understand pedagogy and use it to help students in the process of knowledge acquisition. In a study by Park (2011), a certain level of expertise is required for successful implementation of M-learning. This basically means that M-learning is more appropriate in situations where context expertise is widely available. According to Kearney et al. (2012), there should be a greater emphasis on the importance of the socialized nature of M-learning which requires familiarity with the device in order to ensure its effective use.

Finally, this study has provided insights into the usefulness of iPad and M-learning technologies in the learning of language. Three particular issues have strongly emerged. First, M-learning has provided unparalleled capabilities when it comes to the provision of feedback. Secondly, M-learning has unleashed new capabilities in collaboration which have made learning more

interactive. Third, M-learning has individualized learning. Learners and teachers are now able to adapt their learning in accordance with the strengths and weaknesses. All of these aspects are particularly essential in the learning of language which hugely benefits from feedback and engagement (Serrano-Fernandez, 2009; Castillo, 2008).

A descriptive survey was used in the current study to gather the views of the respondents of evaluating the Effectiveness of IPad as an M-learning Device on Developing STS Students' Oral and Listening Skills Based on Koole's Social Constructivist Model. Closed ended questionnaires designed in accordance with 5-Likert scale were used to gather data. Data was then extracted and subjected to descriptive and chi-square test. The results of the analysis indicated that the majority of the respondents (83.9%) were confident that they used the iPad to navigate the internet to find information relevant to their class. Technological advancement has been instrumental in easing access of information thereby playing a significant role in learning. The iPad technology makes it possible for users to access the Internet, hence students can use the iPad with a lot of ease to access the Internet to collect the information they need in their study. Greenfield (2012) supports the findings by asserting that the iPad can also be used to access e-books, which provides students with a multimodal reading experience that will engage them with animation and sound. iPad technology makes it possible for learners to use the device in learning. For instance, iPad offers several applications that can be beneficial to student’s learning experiences related to reading instruction. In addition, several applications which have been developed for iPad learning enhance different texts being read in the classroom, provide resources for understanding the material further or for extending and assessing reading comprehension.

Moreover, the majority of the participants agreed that they use the iPad to take photos or videos to be used in the class. Data collection is very important in learning across all disciplines. Photos

and videos play a very significant role in enhancing learning. The iPad is instrumental in allowing users to take quality videos and photos, which is important to students since they are able to capture photos and videos they use for learning purposes in class. It has been ascertained that developing mobile learning activities, instructional designers require special attention in creating and managing a knowledge database including the vocabulary databases, reading materials, and learning materials, such as audio or video files for which iPad technology aptly offers the needed technology. Most of the students who participated in the current study also agreed that they were confident that they used the iPad to read and understand content and also to download and use application on the iPad. Learning materials come in different formats such as MS Word, Excel, PDF and JPEG among others. Therefore, it is very important that mobile devices used by students are capable of allowing students to access, download and read content easily irrespective of the format. IPad devices have applications that support different learning materials in different formats. This makes students prefer the iPad since they derive satisfaction that enable them to pursue their education with respect to access and utilization of information using the devices. Apart from using the iPad for communication and social networking, the device is also instrumental in aiding the learning process in learning institutions. Several studies such as Greenfield (2012), Valk, Rashid, and Elder (2010) and Lu (2008) who observed that the iPad offers an exciting platform for students in learning and refining knowledge in an interactive way due to its more advanced features, which have been successfully and widely embraced by the universities. The iPad has become a popular educational device because of the availability of a significant number of educational applications ranging from study aiding Apps to collaborative and interactive learning Apps with a major perk from the usage of such applications being the fact that they support traditional learning activities, instead of merely enhancing them.

The study was also designed to investigate the significance of the use of iPads by respondents to participate in-group discussion, submit assignments and to listen to audio and play recording materials. It was established that the majority of the respondents agreed that they use iPads to participate in in-group discussion, to send assignments and to listen to audio and play recording materials. Discussion is an integral part of learning; therefore technology that can enable students to have virtual discussions is very significant in enhancing learning. IPad devices have powerful technology and applications which can allow students to have in-group discussion, to send their assignment and listen to audio or play recordings all of which are very important in learning. According to Stockwell (2010) portability and perceived convenience of iPad devices makes it an important device, which supports learning. Kim et al. (2013) in their study ascertained that discussion boards have several benefits (e.g., creating and sharing messages) as an online collaboration tool for mobile learning activities. Mobile technology allows the student to be more responsible for the acquisition of information as the student is more active in getting his /her education. The pedagogical approach in M-learning provides enriched learning experiences via mobile whiteboards for interactive discussions, educational video, problem-solving aptitude games, and logical reasoning.

Concerning the interest of the students to learn using iPad, it was established that the majority of those who participated in the research agreed that they are interested in learning by using the iPad. The iPads as devices have applications and technology, which not only support learning but it also makes it easier. This makes students prefer iPads for learning purposes. Students and teachers use new mobile technologies to transform the nature of learning and teaching process across the institutions that integrate technology into education globe. The iPad device has several applications which make it one of the most preferred mobile devices for learning. The applications include content consumption and creation applications for organizing the learning

materials, content delivery applications comprising of lecture presentations, collaborative and interactive learning applications for enhancing student's engagement in class, course / classroom management applications, and teaching and learning enhancement applications. According to Hofmann, Labs and Woods (2010), with the rapid spread of iPads and other M-learning devices in the educational sector, a number of M-learning applications are readily available in the market today. *Alykko* for instance is an intelligent mobile tutoring application for instructors to manage their tutorial material using mobile and web technologies. In the same vein, asked whether, the iPad is a waste of time to them, the majority of the respondents disagreed that iPad is a waste of time. The response of the participants may have been informed by the fact that they derive many benefits from the iPad, thereby making the device important.

Also investigated in the present study is the impact of iPad in learning. Most of the respondents students agreed that iPads could make them more involved in learning. IPad technology has several attributes, which makes it quite desirable. For instance, Kweyu and Sevilla (2012) in their study observed that teaching and learning through mobile technologies afford the option of mobility due to the structure of the device and the participants involved. The feature offers a transition from the occasional, supplemental use of computer labs, to the frequent and integral use of portable computational technology. Access to mobile technology such as that of the iPad in teaching is preferred because it enables learners to practice the language constantly. Access to mobile technology also aids the easy recollection of what has been taught in English, thereby making it possible for learners to put into practice the learned concepts in real life situations. Mobile technology further allows for variety and creativity in teaching and learning, thereby increasing interaction and interactivity between teachers and students, which leads to creativity and critical thinking.

It was also ascertained that most of the respondents agreed that the use of iPads could facilitate learning. Heinrich (2012) in his study observed that students were more motivated when using iPads, both staff and students found iPads easy to use, and the overwhelming majority of teachers regularly used iPads in their teaching. Since the iPad has important applications that support learning and the fact that it is easy to use, it therefore implies that the device plays a significant role in simplifying learning in students as established in this study. On the other hand, most of participants (70.4%) disagreed that using iPads they spent a lot of time off task in class, which implies that the iPad does not complicate matters for learners but instead, helps them in achieving the required learning objectives within a shorter time since access to information, is made easier by the applications of the device. Besides, iPad was also found to help respondents learn after school hours. The mobile device allows students to access information from anywhere provided they have access to internet. Therefore, students can use the iPad in the comfort of their beds to search for relevant information to meet their assignment requirements away from school. The majority of the respondents agreed that iPads could help them answer difficult questions. The respondents agree that the iPad device is an important instrument that can be used to find answers to difficult questions. Students can easily use a powerful mobile device to search for answers to difficult questions on the Internet, especially from online publications such as books, journals, periodicals and on the Internet in general. This makes it possible for students to be able to find answers to difficult curriculum related questions.

On whether the iPad is the only helpful technology, the majority of the respondents agreed that iPads are not the only helpful technology. There are other powerful mobile devices, which support learning. Apart from the iPad, other technologies like iPhones, PDAs, and portable netbook computers have evolved as a liberalization of learning. These technologies also offer quality applications and devices that allow learning or online learning thereby presenting a stiff

competition to iPad. Most of the respondents also agreed that iPads could help them learn beyond the classroom. This is made possible since with the iPad, the learners are able to obtain more knowledge on their own by simply searching relevant information in the internet to enrich their knowledge on any subject. IPads among other mobile technologies are viable for learning in educational institutions. Perkins and Dawes (2011) explored benefits of using mobile technologies for pedagogical purposes, and described teaching and learning through the mobile technologies as a very good way of making the students active participants in the acquisition and dissemination of knowledge in secondary technical schools. With the creation of STS's own iBooks and Apps, iPads emerged as the prefect model to be used in the classrooms. Positive outcomes of using iPads in learning according to Chou (2012) include active student engagement, increased time for projects, improved digital literacy, and digital citizenship.

Most of the students who participated in the study agreed that iPads makes learning easier, use of iPads saves time and that they feel comfortable to learn by using iPads. Leaning using mobile devices like iPad is a clear break through from traditional learning, which was tedious, and time consuming. The mobile technologies have made it possible to easily access learning materials online and even to submit assignments online, which is faster compared to traditional learning approach. For instances, with the advent of iPad, English learners have the freedom of listening, recording, reading text online, referring other sources, and most importantly looking up thesaurus-dictionary, writing mock as tests, sharing information so on and so forth. According to Wang, Teng and Chen (2012), the iPad App provides a meaningful learning interface in the traditional classroom. Instead of memorizing word by word, students get more chances to think and apply words learnt. In addition, students can download the App after class and review the lessons at any time, any place. IPad applications ensure seamless learning and if all teachers can

use such kind of ICT tools in the classroom, it can be beneficial for both teachers and students with respect to enhancing learning.

Most of the respondents also agreed that iPads could replace any other technologies. Despite the fact that there are other brands in the global mobile market, the majority of the students who participated in the study agreed that iPad could replace iPhones, PDAs, and portable netbook among other technologies they know. This is a pointer to the level of satisfaction of the respondents with regards to iPad devices. However, the majority of the respondents disagreed with the statement that they do not use iPads out of classroom. Being a mobile device with several user-friendly applications students tend to use iPads out of classroom to enhance their knowledge, do assignments and even upload and send assignments among other things like holding a virtual group discussion and social networking. It was also established that iPad is an interesting anytime anywhere learning device. What one needs is access to internet and he or she can do much with iPad devices. Most of the respondents agreed that learning English is much easier by using iPad applications. Many scholars such as Patten and Craig (2007), Liu, Navarrete, Maradiegue and Wivagg (2014) and Patten and Craig (2007) stress the important of the iPad in English learning due to a number of reasons. For instance, students depend on the iPad device for real-time support with translator function and dictionary/thesaurus access; students prefer learning with the iPod's helps as it facilitates listening to audio recordings for pronunciation and speaking in English and by providing the capacity for speaking, reading, and writing skills, the mobile devices can provide immediate listening acquisition for language learners.

The effects of classroom discussion appear to apply differently to different ability groups (Kahn, 2007). In a meta-analysis of empirical studies conducted to examine the effects of classroom

discussion on students' comprehension of text, researchers found discussions had more effect on students of below average ability than for students of average or above-average ability (Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009). One possible explanation suggested was that students of higher ability levels already possess the skills needed to comprehend and so did not need the discussion as much. Looking at the literature on the impact of the iPad on student outcomes, there have been few studies to date that investigated any differentiated effect on different ability levels. One such study by Sheppard (2011) looked at the percentage change in Knowledge, Comprehension and Analysis scores of 43 Year 6 students (boys aged 11–13) after a reading intervention using iPads. They reported that of the three ability groups, only the Low group showed positive growth in Analysis. However, like the other two ability groups, they did not show improvement in Knowledge and Comprehension.

Data from questionnaires found that the students consistently reported that they found lessons using the iPad more engaging. Details of what specifically they found engaging were found in the themes gleaned from qualitative remarks in the questionnaires each year as well as the group interviews of students who had been on the programme for three years: they were now able to access information or learning resources whenever they needed it. Learning was now also more collaborative because by lesson design or due to online connectivity, they could easily tap into a network of fellow learners. One could argue that access to online resources and discussions (both on and off-line) was not due to the iPad per se. The same effect would have been achieved through any other device such as desktop or laptop. While this is a valid point, the mobility afforded by the lightweight iPad with extensive battery life was probably what enabled the students to report that they could use it throughout the day, and even on the bus on their way home. As mentioned before, usability is a key factor in successfully leveraging on such devices in teaching and learning (Milrad & Spikol). It is also noted that the response was more positive

with the younger students. Hence in considering the effect on the students, one should perhaps not discount the novelty factor, particularly when the iPad was first introduced to the students when it was new on the market and very sought after.

Distraction that has been mentioned in the respondents' qualitative remarks indicates that once iPad's novelty wore off, the device became a tool for learning. The other explanation for the higher engagement levels with the younger students could be explained by with how the iPad was or rather, not used by the teachers in STS. The findings signal no indications that the iPad was not used as effectively or pervasively as in the non- STS grades. Which means, remarks such as teacher did not use the iPad as much or that some teachers don't use iPad much except for Keynote, Edmodo or any other surface-used Apps, are not true. Increasingly, they were not just using the apps available but repurposing them to get students to demonstrate critical and meta-cognitive thinking skills.

Classroom observations attested to how the iPad had brought a new dimension in lesson design. For example, teachers set up online mind maps that could be edited simultaneously so that students could work collaboratively and to give peer feedback on each other's work. Assessments also took on a new form with production tools (such as iMovie and Keynote) used as ways for students to demonstrate their understanding. One example, during the observation, was in the speaking lesson when students watched a silent iMovie animation on airport and ticket booking . Then they worked together to tape a voiceover to accompany the animation, hence demonstrating their grasp of the target concepts. The case for the teachers' change in pedagogy would have been more convincing if the classroom observation results had shown a significant difference, which was largely not the case as the findings had shown. However, it could be that the findings were limited by the design of the study that had measured only the discussion as

taking place in the physical class, when in fact, some of the class and group discussion had migrated online. As such, future studies in this area would do well to heed the advice by Sharples, Arnedillo-Sánchez, Milrad, and Vavoula (2009) to focus on the informal online learning sphere, rather than assume that learning necessarily resides in formal teacher-orchestrated learning activities sited in a conventional classroom setting.

Certainly, one needs to interpret these findings very cautiously and the conclusions would benefit from confirmation from replications of the study at other sites and contexts. However, the findings are not unexpected. Fullan and Langworthy (2014) had argued before that technology, when used with sound pedagogy, "unleashes deep learning" (p. 33) which they define as "creating and using new knowledge in the world" (p. 7). In this study, we see evidence of sound pedagogy coupled with the technology that gave the learners the ready access to resource and the opportunity to discuss and clarify their understanding

Also investigated in the current study is how frequent the respondents use iPad to perform various functions. Most of the respondents indicated that they usually use the iPad to download an application that helps them learn something new. IPad devices allow users to install any application they find useful. Therefore, students are able to download and install applications that can help them learn something new. Such attributes is very significant since it does not limit the usefulness of iPad. The use of iPads and specific applications have been found to positively change with students' language development and improvement of skills, such as reading, writing, grammar, and vocabulary. The development of an application is a continuous process; hence, there is still a long way to go for the advancement/development of applications, to embrace the adaptation of an increasing number of students from all kinds of academic backgrounds, and mental ability. The iPad allows users to download and install applications as

they deem appropriate, which makes the device open to recent advanced application that students can use to enhance their learning. According to Lacina (2004), the iPad is a tool that helps to make education more accessible, more efficient, more cost-effective, and more enjoyable. The unique model of mobile learning creates various learning environments since the students can download applications synchronously or asynchronously. The device also enables students to access notifications, weekly activities, feedbacks, assignments, their courses, online libraries, grading reports and these have increased their interest in studies.

Most respondents also agreed that they usually look up something that they do not know or understand in the class. The iPad enables out of class research since student can search for information in many books and journals as well as on the Internet on the things they do not understand in the classroom. In that respect, the iPad helps both students and teachers in enhancing their learning. The work of teachers is made easier since teachers can employ students to do research and present findings on any subject and students can use the iPad to search for any information with much ease. Students as was established in the current study usually use iPad to engage in social networking or group work. The iPad as a mobile device enables students to connect with one another, family members and anybody across the globe. Such applications as social media enable students to network, which is also an important attribute that can be used for learning purposes since students can still discuss class work virtually with other group members. Most of the respondents agreed that they usually communicate with classmates out of the class and chat with English native speakers. Chatting with native speakers for instance can help English students learn from the native speaker. According to Guerrero, Ochoa and Collazos (2010), iPad strategy should enable learners to share their emotions and experiences with their friends by imitating the language syntax of native speakers' sentence pattern.

Moreover, most of the participants agreed that they usually write notes to remind them of homework. The iPad has an application which allows students to write notes and set reminders. Such applications are key to learning since they make sure that the students play their role in learning, thereby enhancing knowledge acquisition. The majority of those who participated in the research agreed that they have used the iPad to read an article or a text. Students can use the iPad to access online articles or download and read articles. English learners can also find the device a very important reading tool. Falloon (2013) noted that the iPad makes people pocket-ready intelligent speaker. Besides, the iPad technology exposes learners to a situation in which they have to grasp language with the right expression. Students usually use the iPad to share a picture or a video with teacher or classmates. Exchange of videos and photos between students and teachers is key in augmenting learning. With the iPad, such information can be disseminated within a relatively shorter time, thereby helping to save precious time needed in learning process. The respondents also agreed to usually using the iPad to play education games, which also complements learning in significant ways.

Moreover, the majority of the respondents agreed that they usually use iPad to listen to an exercise and answer questions. The iPad provides a platform for audio-visual media including books, periodicals, movies, music, games, and web content. The application therefore is very important in education system. Respondents also agreed that they usually use iPad to develop speaking activity, submit assignments and watch English movies. Past study conducted by Liu, Navarrete, Maradiegue and Wivagg (2014) indicated that students prefer learning with the iPad as it facilitates listening to audio recordings for pronunciation and speaking in English. Due to many available applications, majority of the respondents also agreed that they usually use the iPad to help in their presentations as well as to help them in their listening practice. Making a presentation, using iPad implies that students do not need access to computer lab in order to

make academic presentation expected of them. This together with listening practice necessitated by iPad makes the device a very powerful learning tool in the contemporary world. Specifically in terms of enabling oral and listening skills, the findings of this study overwhelmingly shows that the iPad enhances the learning of English language. It has made it possible to self- record, listen and share with fellow classmates and teachers which has significantly enhanced the development of oral and listening skills. However, the iPad is not without its challenges when it comes to learning the English language. Some of these issues have been highlighted in several previous studies. e.g. (Anderson, 2002; Guerrero, Ochoa, Collazos & 2010; Drent & Meelissen, 2008; Falloon, 2013 Yagang 1994).

Concerning students' readiness to use iPads and implement M-learning, a number of issues have emerged. Due to the newness of M-learning, best practice is virtually non-existent in the UAE. According to the findings in this thesis study, there is need for more practice. Similarly, they also argue that there is need for more experience on the part of teachers in order for them to effectively administer M-learning and to deliver effective sessions through increased experience that teachers would be able to implement. It is also agreed that infrastructure is there; however, management and operationalization of M-learning still remains a challenge especially when it comes to the availability of the right software. In sum, when it comes to readiness, UAE teachers' preparedness is below the expected level. In terms of pedagogy, most of the teachers interviewed were largely of the opinion that, they were not ready. However, in terms of the existence of adequate infrastructure, most teachers agree that it was sufficient.

This general lack of teacher readiness reflects an aspect of Park's (2011) "Pedagogical Framework for Mobile Learning". According to Park (2011), a certain level of expertise is required for successful implementation of M-learning. This basically means that M-learning is

more appropriate in situations where context expertise is widely available. Similarly, most of the theories of M-learning emphasise the importance of the socialised nature of M-learning which requires familiarity with the device in order to ensure its effective use (Kearney et al., 2012). In the context of this study, device familiarity amongst students and teachers was largely adequate. However, at the pedagogical level experience was lacking. This negatively impacted readiness for the implementation.

As regards the best strategies for using the iPad in teaching language skills, several elements of pedagogy have clearly emerged. It has been found that allowing students to record themselves and play the recordings back is the best strategy for teaching speaking and listening skills. This is largely a self-directed process. According to the perceptions of the respondents, it is the visualization and engagement offered by M-learning that enhances the efficiency of teaching speaking and listening skills. Moreover, the collaborative work or strategy is also an important aspect in the teaching of language skills. It is particularly mentioned that the individualized nature of iPad powered learning is important in enhancing listening skills. Basically, the iPad and M-learning in general have made it possible to implement pedagogy in new and novel ways.

The best and most prevalent strategies for teaching language with the help of the iPad borrow heavily from Koole's (2009) FRAME model. The FRAME model outlines a three circle Venn diagram. The first aspect focuses on interactivity offered by the device between the learner and learning context. It is this interactivity that also builds on Vygostky's theory of learning which is premised on the socialized nature of learning. Basically, the iPads provide teachers with an opportunity to leverage on their interactivity to optimize student collaboration, contextualization of content and personalized learning pace. Secondly, the ubiquity and ease of reference provided

by M-learning technologies has significantly enhanced learning efficiency and convenience (Kumar et al., 2010).

As for the specific benefits of the iPad in teaching oral and listening skills, the respondents were very specific on the realised benefits. This is probably due to the fact that M-learning is still a new concept in UAE and teachers are yet to see discernible benefits. Nevertheless, two main issues have emerged from the respondents. First, the iPad has brought about interactivity which significantly enhanced congruent opportunities. According to Interviewee 1, self-recording and playback provides an opportunity for students to get instant feedback which enhances the learning experience. Similarly, the same point was indicted from the interviewees that the instant feedback positively impacts student oral practices and thus enhances their learning. Basically, the iPad increases the effectiveness of oral and listening lessons.

However, a contrary point decries the diminishing traditional skills of writing; that is to say, students have become overly used to the iPad which has gradually undermined their writing skills. Nevertheless, it does not state whether diminishing writing skills have undermined oral and listening skills.

The issues of instant feedback, collaboration, individualized learning and reduced student-teacher distance have been mentioned widely in previous M-learning studies. In a study by Ayala and Castillo (2008), it was established that M-learning and e-learning in general have reduced teacher-learner distance even as it has enhanced learning experiences. A host of other studies by Barretto (2003), Hui et al. (2005) and Martin-Blas and Serrano-Fernandez (2009) have also generally reported the same conclusions. In essence, training oral and listening skills require both practice and feedback which conventional training approaches offer limited options on. The iPad makes it possible for learners to practice and assess their performance. At the same time, it

makes it possible for the student to seek feedback from the teacher making learning more individualized and highly effective. It has radically transformed the learning context and associated student teacher engagement.

The findings of the correlation analysis clearly show that M-learning and the iPad are not significantly correlated with the idea that they make learning English language easier. The results show that M-learning and the iPad can facilitate the learning experience; however, they do not necessarily make learning the English language any easier. However, the findings of this study show that when it comes to learning English, the iPad and M-learning are significantly correlated with making learning more involving and engaging (.443), simplifies the learning process (.374), provides help beyond the classroom context (.481), saves time and effort (.404), and makes learning more comfortable (.487). In sum, the iPad and M-learning have largely served to improve the context of learning which has immensely benefited the learning of English. Basically, it has provided more tools to allow teachers and students to better engage with learning.

Nevertheless, even as the iPad and M-learning have a holistic enhancement in the contextual aspects of learning English, issues of pedagogy have not been effectively tackled. The fact that the iPad and M-learning have significantly provided more than adequate tools yet most students are still of the opinion that learning English is not any easier points to a failure in pedagogy. According to Kobie (2011), there is still a lack of in-depth investigation into how the iPad and M-learning can be effectively integrated into pedagogy to yield the best results. Issues of applicability and practicality still abound in the use of the iPad and M-learning in learning contexts. Even though the iPad and M-learning have made it possible to fully put into practice

Vygotsky's theory of sociology and learning and Piagetian individualized learning, its novelty has undermined its practical implementation and applicability in learning contexts.

Judging by all the findings that have been extracted from the teachers' interviews, the iPad would appear to be an excellent teaching tool. However, one of the main emerging issues is the challenge presented by class control. The iPad is an excellent device and its efficacy as a teaching tool has largely been due to students' professionalism in using it. Furthermore, students and teachers can only derive full benefit from the iPad if its use is controlled. Otherwise, students can easily shut off the teacher and concentrate only on the iPads. The issue of class control is also expressed in which the findings argue that allowing access to a wide range of Apps actually impedes learning. Therefore, it is recommended to limit what students can do with the iPads in the classroom context.

The issue of the efficiency of the teaching process also came out clearly from the findings of this study. Working with online books without first downloading them slows down the learning process which can impede the learning experience. The numerous M-learning Apps/devices present a challenge to both teachers and students as they have to sift through all of them to know which ones are really suited for their specific lesson plans and strategies. According to previous studies, M-learning has largely considered the lack of student control as a positive and not a weakness of M-learning. For instance, Han and Li (2010) define an M-learning context as a situation where learners are in control of their learning. They also go further to state that the concept of M-learning is premised on learners' individual openness to cognitive engagement in M-learning activities. Essentially, the lack of control that most teachers decry is a fundamental tenet of M-learning. According to Han and Li (2010), it is to the independence of learners that M-learning owes its success. This aspect also has broad implications for pedagogy. With iPads,

learning is both social and individual; depending on context, M-learning can be mostly individual. In this regard, M-learning embodies the Piagetian theory of learning by creating a learning process that is largely centred on the student (Vadeboncoeur, 1997). Therefore, the fact that most of the teachers interviewed cite lack of control as a disadvantage of iPad use reflects inadequacy in training. They have failed to appreciate the core strength of the iPad as a tool in M-learning.

The findings singularly show that engagement and commitment to educational goals on the part of the students remains one of the major obstacles to iPad use. The availability of games is a major source of distraction to learners; the lack of engagement on the part of some students leads to distraction and similar sentiment has also been expressed in the interviews that are of the opinion that students consider iPads more as toys and less as learning devices. It has been decried that the excessive freedom that iPads give to students distract and spread distraction to other students. In sum, for most teachers and curriculum specialists the main obstacle is distraction.

A number of previous studies have also reported on the issue of student engagement with iPads and other M-learning devices. Kobie (2011) decried the idea that most institutions were "jumping onto the iPad bandwagon" without taking into consideration issues of applicability and practicality from the point of view of pedagogy. Nevertheless, the issue of engagement ignores the fact that play is a critical aspect of learning.

The findings of this study reflect varied experiences and points of views from the participants. One of the aspects that have emerged is that students are, by and large, comfortable with iPads as gadgets and by extension as tools. They are more conversant with iPads than even with laptops. This is probably due to the growing transition from computers to mobile devices as primary

gadgets of document creation and communication. The quality of familiarity is a key concept of Koole's theory of mobile learning. Device usability and ability to offer interactivity underpins the social aspect of iPads as mobile learning tools (Koole, 2009).

The utilisation of the iPad as a learning tool has yielded mixed results. Some students have been enabled through the iPad to achieve their best. However, this has only been possible for highly engaged students. For less engaged students, it is of the opinion that it has actually made things worse. Basically, for less engaged students, the iPad has deepened their disengagement and made it more difficult for teachers to control them. A similarly it is argued that without iPads there could be more learning going on. This is also a testament to the declining levels of engagement and diminishment in teacher control that is produced by M-learning and mentioned by Kobie (2015). In essence, the iPad and M-learning have not necessarily benefited all students. Some students could actually be losing out on class learning opportunities.

Also investigated the challenge with the iPads and M-learning is actually with the richness of the ecosystem. Practitioners would expect that with a rich ecosystem of learning Apps, M-learning would be better. However, the rich ecosystem has actually made it more difficult for teachers and learners to identify the right Apps and utilise them accordingly. This is partly a problem with the newness of M-learning and partly an issue of pedagogy. Despite the various theoretical and empirical studies focusing on the benefits of interactive and socialized learning (Sharpless et al., 2005; Kumar et al., 2010), there are none on how learning and teachers should navigate the maze of learning Apps that are constantly being released into the ecosystem.

The study also reveals that the respondents largely reflect a unanimous agreement with the idea that the iPad has overwhelmingly enhanced the learning of English oral and listening skills. The iPad has been quiet good for the development of oral and listening skills despite some of the

restrictions. The iPad was found to be better than any workbook or paper based learning methods it is also agreed that the iPad should be just a component of learning oral and listening skills. Therefore, he advocates for controlled use whereby the teacher allows for iPad use as needed on a case by case basis. One of the critical advantages of iPads as M-learning tools is their ability to provide reflection on speaking, listening, writing and reading. Basically, iPads have made it possible to achieve both stimulus and response on demand something that traditional learning approaches could not deliver. In this regard, this study echoes similar findings by Read and Roe (2013) and Csizer and Kormos (2009) whose studies also concluded that ubiquitous interactivity provided by iPads and M-learning technologies significantly enhanced oral and listening skills.

In terms of teaching listening and oral skills, the strategies are largely premised on the social constructivist theories of learning as outlined in Koole's Frame of Mobile Learning (Koole, 2009). It also borrows from behaviourist theories whereby the process of learning is enhanced through stimulus and response (Hinkel, 2012). Essentially, there is the aspect of socialised interactivity in the recording of each other. Secondly, there is the process of discovery as students engage themselves with self-recording and listening Apps. Previous studies by Cavus and Ibrahim (2009) and Helmke (2010) have also shown that participation and collaboration are essential in learning. In this regards, iPad and M-learning have made it possible to fully realise the social constructivist and behaviourist theories of learning.

In terms of the future of iPad and M-learning in vocational education, the respondents' views were unanimous. M-learning and the iPad will continue to be an integral element of vocational training. The iPad as an M-learning device has great potential in terms of the breadth and depth of use in educational contexts. However, the only concern is that these devices need to be used appropriately. M-learning devices will get better with time and their application for educational

purposes will also increase and become more effective. The iPad has great educational potential; however, there is a need for greater control of exposure and limitation of social media applications such as Instagram and Facebook.

The general consensus based on the findings of this thesis study is that M-learning and the iPad will continue to underpin the transformation of education. However, it has also emerged that there is still a huge gap in terms of how M-learning and iPad use is to be structured in educational settings. Some practitioners would prefer greater use and wide proliferation of iPads and M-learning in educational settings. At the same time, some practitioners are of the opinion that iPads should be limited and used sparingly. In essence, most practitioners have largely failed to appreciate Koole's framework of socialised learning (Koole, 2009). Most of the practitioners who want iPad use to be restricted have failed to appreciate the value of the socialised learning journeys in improving and embedding learning in everyday learning (Vygotsky, 1978; Vadeboncoeur, 1997; Woo and Reeves, 2007). In some respects, the varied perspectives expressed by practitioners are reflective of the lack of pedagogical foundation for M-learning (Kobie, 2011). These findings serve to affirm Kobie's (2011) argument that most institutions and practitioners have basically jumped onto the iPad bandwagon without adequate in-depth investigation in terms of practicality and applicability.

Collaboration is the hallmark of M-learning as powered by the iPad. The promise of collaboration, socialised learning, and higher levels of collaboration are the main selling points of M-learning. However, the findings of this study shows that to some extent, hardware and infrastructural shortcomings continue to be a challenge. Teachers and students are yet to realise a deeper level of collaboration to enable them to fully harness the power of iPads and M-learning. In this regard, the findings of this study reflect that of Godwin-Jones (2011) whose study

concluded that more innovation will be needed to fully harness the power of mobile devices. Issues of discipline whereby teachers desire more control are basically manifestations of pedagogical and curriculum failures. Most teachers are still experimenting and there is lack of structure in how M-learning and the iPad are driving learning. Previous studies by Senior (2010) and Kobie (2011) also reported similar conclusions

In term of most favourite Apps, the findings of this study show that there is still a high level of fragmentation. Most practitioners were still largely rummaging through the ecosystem and learning via trial and error and also from peers which Apps were the most effective. The above excerpt from Interviewee 3 reflects what most practitioners are looking for in an App. For this particular respondent, operating paperless and ability to engage remotely are essential. In the teaching of oral and listening skills, the majority of participants seem to favour Showbie primarily because of these features. It offers robust collaboration and instant feedback capabilities which are critical to the learning of oral and listening skills. Previous studies by Illeris (2008) and Koole (2009) have also emphasized the power of ubiquitous interactivity in powering learning. This study affirms the theoretical foundations provided by these studies that interactivity and ability to engage with others and learn from anywhere will empower learning.

### 5.3. Pedagogical Implications and IPad Teaching and Learning Strategies

Taking into consideration the debate between the educators who are keen on the different uses of iPads in education; they enthuse the connectivity, versatility and the mobility as well as the imminent benefits of hundreds of educational apps, and the skeptics who remain doubtful that the iPad may become the center of the classroom instead of being used as a tool for teaching and learning (Hu, 2011), this study has revealed some suggested strategies that may bridge the notional disparity between the dichotomous atmosphere of anticipation and skepticism.

Therefore, implementing the iPad strategies in teaching and learning can ameliorate the debaters' inconsistencies concerning whether the iPads are tools or ends in themselves. In this section, the extracted strategies from this research study and from the literature are presented and suggested to be in place for the educators, practitioners and learners as well as instructional designers to make use of.

Although it has been emphasized in recent studies (see, for example Clark and Luckin (2013); Mango (2015) that the iPad in itself is a tool and not an end and it should only be used as such by learners within the classroom teaching environment, this contradicts with the essence of the ubiquity of M-learning. If these devices need to be fully implemented, there should be comprehensive rather conclusive instructional plans that include the different activities internally (inside the classroom) and externally (outside the classroom) to achieve the utmost benefits of these M-learning devices. From this perspective, the pedagogical implications should unfold. Thus the implications hereafter shed light on the iPad not only as a tool for teaching and learning but it also comprises the core of the learners' engagement, strategies by itself and means of communication and collaboration inside and outside the classroom context. So, the pedagogical implications are as follows:

- **Teacher training:** the issue of teacher training is central to the successful implementation of iPads in education. This thesis study tackled the problem of teachers' readiness and training to implement the iPad in their instructional plan and extend the timeframe of planning to include the concept of 'anytime' 'anywhere' learning. Out of the findings of this thesis study, there are indicators that teacher training is unsystematic and to some extent idiosyncratic. Unequivocally, teachers are either inhibited to integrate technology as it should be or they take unplanned personal initiative to incorporate the use of technology especially M-

learning into their teaching and learning which definitely affects the results. Ekanayake and Wishart (2014) argue that teacher training on M-learning integration into education has been the least explored area in the previous studies either because M-learning is still under-theorized in teacher training (Kearney & Maher, 2013), or there is no informed decision concerning the value of effective implementation of M-learning (Schuck, Aubusson, Kearney, & Burden, 2013). Thus, a sound pedagogical implication is needed (Newhouse, et al 2006) for M-learning initiatives.

Few studies conducted recently address the issue of teacher training and teacher support (Baran 2014; Kearney, et al 2012). So, to bridge this gap, the findings of this research provide an initial platform for future research in this field as well as suggesting pedagogical implications for teacher support. First, in accord with Husbye & Elsener, (2013), it contributes in assisting pre-service teachers to develop and understand new literacies. Teachers are having instance access and ownership of information resources which enable them to potentiate these resources to the benefits of their learners. The findings of this study also imply, concerning teacher support, that there could be an effective collaboration between pre-service and in-service teachers composing groups of remote discussion. This will help in realizing the potential of the new teachers and facilitating their enrolment in the teaching training programs. It is also indicated that the need for master power users (MPU) in the field is crucial. These MPUs can offer constant training and monitor the novice teachers so as to keep them on track.

As for the in-service teachers, M-learning integration has great potential to enhance the in-service teachers' performance. The discernible extracted implication out of the findings of this thesis study is in accord with the previous literature concerning in-service teacher training. The

main benefits of integrating mobile learning into in-service teacher training contexts include boosting reflection-in-action as a significant constituent of professional learning (Aubusson et al., 2009); providing opportune access to the resources (Shotsberger, 2003); allowing contribution in knowledge production and teaching practices sharing (Aubusson et al., 2009); and encouraging, reflecting upon, and sharing experiences (Aubusson et al., 2009). Besides, conducting professional development through mobile tools, previous researches also investigated the effects of such programs on teachers' integration of technology in their classroom teaching practices. It is sought that these findings also affect teachers' integration of technology and their relationships with their students. Thus, it is worth mentioning that the results of this study, being in accord with many of the previous studies that tackled in-service teacher education programs, is paramountly important to teacher education programs as implication and as applicable strategy. To instantiate, most pre-service and in-service teacher educators start incorporating mobile devices in their practices in STS which turns their role from content introducers into facilitators of the integration making use of the mobility of these devices.

Contrary to what Mioduser,et al (1999) have asserted that 'one step forward for the technology, two steps back for the pedagogy' (p. 758). It has been contended that the utmost benefits of M-learning can be arrived at, through contextual, collaborative and constructivist learning environments (Patten, et al 2005). This view is gained from the observation of the findings of this study indicating that technology integration in education offered learners opportunities for contextualized collaboration. Furthermore, it boosts the sharing of knowledge among peers and fosters authenticity as well (Herrington & Herrington 2006; Switzer & Csapo 2005). Once M-learning has been situated in the instructional plan, it will definitely support collaboration and the production of authentic tasks. In the observation phases of this thesis study, it has been noticed that learners create virtual groups and invite them to extend the learning environment

outside the classroom setting. Therefore, it turns out to be a built-in strategy for the learners to create such groups to discuss the content anytime anywhere. We can rightly say that M-learning, throughout a proper integration, will exceed the simple normal delivery of information or one to one communication to become cognitive tools in authentic learning environments.

- **Teaching and learning:** by adopting mobile technologies for teaching and learning English, the technologies should support social-constructivist pedagogical approaches to learning. This has been asserted in the literature (Cochran,et al 2012; Kervin,et al 2013; Kukulska-Hulme, Shield & Hassan 2010; and Mantei, Olney & Ferry 2009) as well as in this study. Thus, the first pedagogical implication is encouraging and fostering the teachers to situate their teaching strategies in a social-constructivist frame. Conversely, students should be encouraged to create learning groups by which they can help each other to communicate the content of English language. Furthermore, collaborative pedagogical approaches are characterized by the sharing and construction of knowledge among learners using technology as the primary means of communication.

More importantly, despite the comprehensiveness of Koole's FRAME model in encompassing the social- constructivist view points of teaching and learning by using iPads, Laurillard's Conversational Framework (2011) also proved its effectiveness as a suitable model. It was developed based on several learning theories including instructional, constructivism, and social constructivism. Based on these theories, teachers' strategies, while teaching English, need to ensure that communication occurs in any direction between teachers and learners so as to facilitate the learning process. From a different view, numerous studies have reported that discussion, interaction, and reflection during the learning process provide positive learning outcomes in M-learning (Chao, Chen, 2009; Sharples et al., 2005). Hence, these strategies

should be encouraged. From the teachers' side, they need to activate intervisitation, demonstration and the pre-post class discussion and reflection which help in a great deal the teaching learning process.

- **Developing listening and speaking skills:** although the advantage in developing oral and listening skills is not inclusively given to the iPad, compared to other M-learning devices, the portability, mobility and affordability of the device enable it to facilitate the materials and the content for listening. The findings of this study supported by previous literature demonstrate the role of the iPad in developing listening skills. The strategies that were implemented during the observation show that TED Talk was predominantly used in developing listening skills as it has a screen subtitled of the scripts. It helps create authentic learning environments. According to Herrington and Oliver (2000) authentic learning environments should have authentic contexts that reflects real-life knowledge, authentic activities that comprise complex and ill-defined situations and problems for investigation, collaboration that allows for a social construction of the learned knowledge, meta-cognitive opportunities for reflection, teacher scaffolding as well as access to expert performance and authentic real-life-like assessment.

The need for assimilating knowledge in an authentic teaching environment leads to the profuse app-based oral and listening activities. The findings of this thesis study provide the opportunity for learners and teachers to expose to different kinds of iPad apps that help in developing the two targeted skills such as: YouTube, Speaking Pal, and Dragon Dictation….etc. these apps enable the teachers to design the activities that may put the learners in authentic situations where they practice their oral and listening skills. Since learners are more motivated and engaged once involved in a real-life situation, the affordance and the mobility of iPad can

easily provide them with the authentic instant audiovisual activities that help them acquire their both cognitive and meta-cognitive strategies in developing oral and listening skills. Thus, iPad implementation is highly recommended in developing learners' oral and listening skills as well as providing them with the needed strategies to overcome the difficulties that they face while trying to digest spoken language discourse.

- **Assessments:** part of the effectiveness of any program or intervention in education is the assessment. Since it is the stage which augments the learning process, considering the pedagogical implications of M-learning in assessment is an integral part of its implementation in education. The findings of this study indicate that assessing the activity or the given task can be feasibly completed using the M-learning devices. Moreover, it is demonstrated throughout the teaching and learning practices while implementing M-learning device that there are free customizable apps that can be used in assessing students' performance. To assess students understanding it has been noticed that '*Socrative'* is effectively used. Thus, a room for instant and direct assessment of the students work is performed. More importantly, the results of any assessed activity are stored as database that can be resort to once analysis of the results is needed. Along with this iPad app there are other apps such as: '*Showbie'*, '*Edmodo'* and '*ClassDojo'.* It is observed that these apps are employed as a wonderful tool during parent-teacher conferences or department meetings. Therefore, the use of M-learning devices in assessing students' work implicates instant, direct and potentially formative or summative assessment. The ubiquity of these devices again gives the opportunity for remote or distance assessment. That is to say, students and teachers no longer need to be in the same place.

## 5.4. Recommendations

The findings of this study provide a clear picture of the situation of M-learning and specifically the efficacy of M-learning for teaching English language. The findings have broadly evaluated the major aspects of M-learning ranging from teacher training, infrastructure availability, user readiness, and teacher strategies when it comes to the use of M-learning as powered by the iPad. In the course of this study, the researcher identified some of main strengths of M-learning, eco-system weaknesses, and opportunities that still remain to be exploited. This section outlines recommendations for both practitioners and policy makers. These recommendations are geared towards optimizing the potential of M-learning and iPads in educational contexts and informing policy initiatives that will go a long way to enhancing teacher competence.

Teacher and student training are critical to the successful implementation of M-learning. This study has established that introduction of M-learning in UAE was accompanied with some intense teacher training. However, this training was largely limited to the technical aspects of deploying the iPad in learning contexts. The depth and usefulness of this training in aiding learning remains a subject of debate. Basically, there is an acute lack of pedagogical training as concerns the use of the iPad and M-learning. In this regard, this study recommends inclusion of M-learning approaches and technologies into teacher training. There have been theoretical studies on how best to integrate M-learning into current learning contexts. These studies should provide a reference point to be used in adapting conventional pedagogy to M-learning. At the same time, M-learning should feature prominently in teacher training.

In terms of infrastructure, there still exists a huge opportunity for improving educational experience provided by M-learning. The hardware infrastructure required for facilitating device connectivity and delivery of M-learning is largely available. However, there are still

opportunities in optimizing collaboration and interactivity of M-learning platforms. For example, one of the insights provided by this study is that instructors have benefitted immensely from peer-education. Similarly, interactivity and collaboration in learning have empowered learning amongst students. The researcher recommends additional investments by the authorities in optimizing interactivity and collaboration. This could be in the form of an educational platform that brings together curriculum developers, trainers, and teachers to provide resources and reference sources for best practice. Similarly, a platform for connecting students and allowing them to interact and collaborate with each other will deepen the interactive and collaborative capability of M-learning.

In terms of the relevance of M-learning in teaching English language, the benefit of iPads and M-learning are indisputable. However, the challenge is with the ecosystem of apps. There are numerous apps with varied usefulness when it comes to teaching oral and listening skills. The diversity of the ecosystem has many benefits; however, it also means that teachers and students are at a loss when it comes to choice (suitability and efficacy of apps). This calls for standardization and pre-selection of certain apps. This will enhance collaboration and the ability of teachers to effectively deliver M-learning via these platforms.

The issue of diminished levels of student engagement has also featured prominently in the findings of this study. Issues that have been mentioned include mobile games and social media as leading sources of distraction. Some teachers have also mentioned that the device itself is a distraction. Social media and games underpin the socialized and fun nature of learning. Deactivating them could actually undermine the novelty of M-learning. On the other hand, these applications undermine levels of student engagement. In this regard, this study recommends development of appropriate tools at the technological level to enable teachers to control content access by students as required by class needs. Blanket termination of certain

content can be counterproductive. At the same time, too much freedom could undermine learning outcomes. This study recommends regulation of content access with goal of optimizing student engagement.

### 5.5. Limitations

This study adopted a mixed research method that was primarily underpinned by qualitative approaches with limited quantitative approaches being used. At same time, this study collected data from both teachers and students in order to have complete picture of the M-learning situation in UAE. Nevertheless, the above choices provided some limitations for this study. First focus groups and interviews are largely subjective. At the same time, most participants in focus groups and interview are motivated by the need to impress peers and the interviewer. This limits the ability of the researcher to gather honest opinions. Focus groups and interviews limit the ability to gather data from a large sample. There is only so much data that one can effectively and efficiently collect from participants. As only a small sample was used; this could potentially undermine the accuracy of the findings and generalizability of the results to the entire UAE.

This study was also limited in scope. The focus of this was largely on inputs without consideration of the outcomes. This study was mainly focused on issues of teacher training, infrastructure and to a limited extent on teacher performance. However, it did not consider student outcomes in terms of how M-learning has contributed to learner proficiency. Therefore, it is not possible for this study to conclusively determine how exactly M-learning has positively contributed to learning of English language and overall learning ability. In this regard, this study recommends that future studies should seek to link inputs (M-learning) and outcomes (language proficiency).

There has recently been a restructuring of the institution where the current thesis was conducted. The two ACTVET bodies, Applied Technology High Schools (ATHS) and Secondary Technical Schools (STS) are now combined under one umbrella. Therefore, another limitation is that the samples are grade 11 and 12 STS vocational students. The STS system now includes more grade levels that if included might have changed the findings of this study. It was beyond the scope of this study to include them all as during that time of the research, the marriage between the ATHS and STS has not yet happened. Therefore, it might more viable for future research to include all the grade levels to come to more generalizable findings to the whole context (STS& ATHS). Furthermore, the samples include male students only for a cultural constraint.

Considering the gender and the background of the samples, there are two basic limitations. As this study tackled only the male students as samples, including the female might make a rich source of comparison between them and their male counterparts. According to the background of the teachers and whether they had previous knowledge about M-learning and its application and implication in teaching and learning, since the data obtained two years before, it is out of the hand of the researcher to reconsider the participant teachers' background about the aforementioned issue. Thus, it adds another limitation for this study, thought it was sought that as they set for training at the beginning of every school year, their previous background might not affect the results of the data.

# Chapter Six

## Conclusion

It has been asserted that mobile devices learning (M-learning) is a demanding research area starting from the nineties of the last century, yet it is the prominent area as far as technology integration into education is concerned. In the recent past, integration of technology in to teaching and learning has emerged as a way to empower education and make it relevant for the need of the 21st century. Technology in the form of mobile devices and access to the Internet has received wide adoption and at the consumer level (Krotov, 2015; Prensky, 2011). Many people across the world and indeed in UAE use smart phones connected to the internet as the primary channels of communication. However, adoption of similar technologies in learning contexts has been slow and subject to numerous challenges (Guy, 2009). These challenges have emanated from a number of sources including: infrastructure bottlenecks, teacher skills gaps, and lack of pedagogical foundation upon which to anchor e-learning (Kasiyah et al., 2014; Krotov, 2015; Weinberger, 2012). In the UAE, the findings of this study have shown that these challenges have invariably impacted the efficacy of M-learning. Nevertheless, M-learning has provided a paradigm shift and is gradually revolutionizing learning in UAE.

It has rightly been argued by Joshi (2012) that as learners today have a direct access to information through technology and the Internet, which has enabled them to manage their own learning in informal settings, the ubiquity of the learning devices provides an "anywhere any time" learning environment. Therefore, Students have changed from passive learners to truly engaged learners who are behaviorally, intellectually and emotionally involved in their learning tasks (Stockwell, 2008). This has transformed their image as mere "consumers of content" to the "producers and publishers" (Gitsaki, et al 2013). This thesis study conforms to the results of the

previous study of Gitsaki, et al (2013) as they share the same context though the later focuses on higher education rather than the vocational sector. Both are fostering the advantages of using the iPads in educational domains in UAE as well as conforming to the iPad initiative that has been ordained by the leaders of this country.

Even if the spread of mobile devices is yet to achieve its greatest extent, varied devices such tablets, iPads, PDAs, etc. are finding their way into classrooms, in children's pockets, their homes, and being applauded for their perceived benefits. Incorporating these devices into the coursework framework, has emerged as a priority agenda for a majority of educational institutions. The establishment of STSs by the UAE government is proof enough of the acceptability and support for M-learning and its varied applications. It has become mandatory to ensure that educational practice can include these technologies in productive ways. These technologies also have the capability of creating new environments for learning such as "virtual communities".

Several models, such as the Conversational Framework Model, Pedagogical model, and the FRAME model, have been developed for explaining the interaction of several variables involved in the learning environment, learning process, and learning content. Further, the wide ranging applications that are today available in M-learning, have demonstrated behaviorist, constructivist and collaborative perspectives of learning theory. These learning theories broadly explain how individuals acquire, organize and deploy skills and knowledge.

Irrespective of the way learning is acquired by the students, or in what kind of situation these variables interact among themselves and also their external environment, there have been uncountable instances and studies that have clearly portrayed the M-learning techniques and devices as a win-win situation. There have been numerous studies, as discussed in this thesis

study, which have demonstrated the positive effects that M-learning has had on the achievements and performances of students, particularly inculcating characteristics such as collaboration, motivation, student engagement and encouragement.

However, there is still a long way to go for the development of applications, so as to embrace the adaptation of an increasing number of students from all kinds of academic backgrounds, and mental ability. There is an urgent need for applications that create effective learning environments which are learner-centered, knowledge-centered, assessment-centered and community-centered (Thinley, et al 2014).

Also, apart from the technological advances required, the successful implementation of M-learning requires a combined effort from the teachers as well as the students. The basic requirements, in order to achieve this are an active learner, active instructor, creative pedagogy, flexible curriculum, and a community outreach. Furthermore, given the varied adaptive capabilities of different students, there must be a special focus of these applications and models being developed on their design and content features, to make them more suited for use on iPads. Ultimately, M-learning has gained the top priority given its huge effect on the learning pathways of young students using them independently for problem-solving tasks, and academic enhancement.

In this thesis study, a mixed methods approach was used to generate as many answers as possible for the research questions. Developing these methods to suit the research objectives and to address the research questions was a pivotal step for the research to be successfully conducted. The researcher touched upon the research paradigm which is the "world view that defines, for its holder, the nature of the 'world', the individual's place in it and the range of possible relationships to that world" as stated by Guba and Lincoln (1994, p.107). Through this selection of the

paradigm, the researcher is motivated and interested in conducting the study. The "justification of our choice and the particular use of methodology and methods is something that reaches into the assumptions about reality that we bring to our work" (Crotty 1998, p.2). Inspired by this aphorism by Crotty, the researcher articulates the suitable research paradigm and presents the epistemology, the ontology and the methodology that helped in developing this thesis study.

Concerning the significance of the research methods that have been utilized in this thesis study, the multiplicity of research methods was an added value to the different uses of the focus groups discussion as it constitutes significance for this thesis. To put it differently, the procedures by which the Focus Groups have been conducted are not only a discussion of the perceptions of the participants in the issue under investigation, but they are also a demonstration of the participants' practical expertise in the field. This practicum adds to the study the value of focus group practicalities which expands on the use of the focus group as a research method. Future researchers can make use of this point to expand the uses of the focus group: this could add to literature that discusses the effectiveness of the focus group as a research method.

The findings of this thesis study have been presented. The analysis encompasses the different findings of the various research methods. The findings from the focus groups covered different aspects such as implementation of the iPad, infrastructure, training and outcomes. This study has also presented and analysed quantitative data gathered from the survey. In this regard, it has analysed the potential of the iPad in learning contexts, learner willingness, and correlation between the variables. This study has also analysed the finding from the interview sessions focusing on practitioners' perspectives on the iPad as a teaching tool, teacher and student readiness in iPad implementation, best iPad implementation strategies, its benefits in teaching oral and listening skills, challenges of iPad implementation, and teacher experiences. It has also

analysed findings on teacher perspectives as concerns the future of iPad in UAE vocational education.

From a different angle, this thesis study has outlined and discussed the main findings for this research. It has discussed teacher training and the need for a greater alignment between teacher training and M-learning. In particular, incorporating pedagogy has been highlighted as critical in equipping teachers with the right skills in M-learning. It also discussed the aspect of infrastructure which is adequate in the case of UAE. Nevertheless, this study has also recommended that the infrastructure can be improved by additional investments in developing an ecosystem that supports collaboration and interaction amongst teachers and students. Furthermore, this research study has proffered recommendations on strategies for optimizing engagement amongst students. Basically, this thesis study has outlined the inability to collect data on student outcomes as one of the major limitations of this study.

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# 8. Appendices

## 8.1. Appendix A: Focus Group

**First issue: Teachers and students training.**

- Do you think that teachers and students receive enough training to best implement iPad in teaching and learning?
- Do you thing that schools have the technological infrastructures in all campuses? If not what is needed to best equipped?
- As teachers of English in this campus do you think that the training that you have received touch upon language development?
- How do you see you level after and before you receive the iPad training?

**Second issue: iPad Utilization.**

- How often do you utilize iPad in your instructional plan?
- Do you think that student should use iPad in every skill-based activity?
- What strategies can only be implemented by using iPad?
- How could you help your students develop their own strategies using iPad?

**Third issue: Oral and Listening skills.**

- How do you think student use iPad to develop their oral and listening skills?
- What strategies do you use to help students in oral and listening skills?
- Can these strategies be best implemented using iPad?
- What addition does iPad have in developing students' oral and listening skills?

Focus Group 1 Transcript

**The moderator:** good afternoon ladies and gentlemen, I would like to snatch this a… opportunity to welcome you here and thank you very much for attending this session. _____ I am a researcher investigating the effectiveness of implementing iPads in developing STS students' oral and listening skills and whether by using iPads or any other teaching tools it will enrich the learning environment. I am aiming at finding the learners and the teachers' readiness as well as the teachers' strategies and the learners' practices that can be best implemented using the iPads applications "Apps". For not keeping you so long, briefly I would be thankful if you could feel free to express your views and rest assured that your confidentiality will be maintained and your names will be replaced with pseudonyms. The scripts of this focus group interviews will be only used for research purposes. So welcome once more.

**The moderator:** initially, I wish you discuss these concerns and be sure that your inputs are highly valuable to me and your opinions can make difference in the future plan of technology integration into teaching and learning environment. The concerns I hope you thoroughly discuss are:

- Do you think that teachers and students receive enough training to best implement iPad in teaching and learning?
- Do you thing that schools have the technological infrastructures in all campuses? If not what is needed to best equipped?
- As teachers of English in this campus do you think that the training that you have received touch upon language development?
- How do you see your level after and before you receive the iPad training?

Please could you use the cards in fort of you and write your names to facilitate keeping a track on the turn taking and as a reference for later transcription. You know this focus group interview will be videotaped. There, we have coffee and tea, please feel free to make yourselves feel at home. (Time for coffee and tea was given meanwhile participants were writing their names on the given cards).

Ok ladies and gentlemen, (one participant interrupts the flow of the speech saying) here we go ah ah ah we can leave now thanks for the coffee.

**The moderator**: sure sir, ladies and gentlemen you have the right, of course, to leave whenever you want and be sure that there will be no harms or risks as a consequence upon withdrawing from this focus group interview.

(The moderator tries to orientate himself with the names of the participants. Starting from this point, the names are replaced with the given pseudonyms for confidentiality purposes. The names of the participants are as follows: Khalid, Tariq, Alex, Fred, Juan, Jessica, Karen and Lora)

Fred: Where would you like to start? And shall we form groups or it is an open discussion? (no sir it is just an open discussion which will based on your experience as teachers in the STS)

Fred: ok if aaa.. I am or to be the first one to kick the ball, I think … the institution has such training for teachers ..em but it was not enough it was just for ICT skills for example on how to register your iPads and how……well I can say they are the basics that the kids need to activate the device and how to handle any App…. That is all what the training about what do thing chums.

Tariq: well , as a teacher in the STS from the day the idea put in place, I think that teachers receive enough training, but as you mentioned that the training only focus on the technicalities of using the iPads…. em but not at all the …. the not the pedagogical side I mean that teachers once they understand how to put the iPad in use and …. It will be their responsibility to search for and implement what suits them and their students and how these iPad applications help their teaching and learning targets. One more point (can we just ask the ladies here about their expertise in this field,, if if they can show your inputs ladies thanks) just let me finish this point … the point I want to mention is that the trainers demonstrate some of the applications that may be used for different teaching and learning situation, moreover it is not easy for any trainer to expect the type of Apps that are needed for the teaching situation. You know some teaching practices necessitate searching for different apps that serves the objectives and facilitate the implementation on the other hand only the teacher who can decide how to …..I mean the way they should use the iPads and some iPads applications internal features that would help in facilitating the learning processes and again achieve the goal of changing learning from traditional into virtual learning. Sorry that I took much time that is it.

Lora: actually, I did not use to utilise iPads em yes for technology integration but as for iPad and in this institution, it should be reconsidered er the if the way they are dealing and applying the iPads in teaching and learning is not appropriate at all (who are they the students or the institution itself?) both actually, the students deal with the iPads the other way around that is to say instead of extending the learning context into the outside of the classroom it is unfortunately the opposite that they extend the games they started the day before to continue at class (some sounds starts coming from the whole group some agree others disagree)

The moderator: excuse me can we just let her finish her point we just want to understand more please I will give the chance for everyone to express his point, please feel free to use the paper and pens in front of you to jot down what you are intending to comment on this point thank you yes yes thanks yes I appreciate that well. Yes please go on Lora.

Lora: yes, what I have just mentioned is one way of the misuse of the iPads in the teaching and learning situation. The students are keen on interacting but negatively not exactly negatively but I mean they were working off task when they are interacting while the teacher is explaining or trying to instruct them to use the iPads for a certain task, so it is then the use of the iPads is a toy not a tool for teaching and learning an a…( sorry to interrupt you but do you think that they receive enough training as for teachers and students for iPads) well as a teacher I only receive

training as they previously said only for how to manage myself in the iPads but no training for specific applications to be used for teaching and learning specially for listening and speaking. But as for the students, some are really brilliant while others know how to use it but they addict playing and using instagram and social media for communication that is another issue that needs to be maintained and taken care of that the way students interact.. no I mean if they make use of the virtual world outside to maximize their learning scope then I would totally agree that iPads are very beneficial in that sense.

The moderator: Yea Karen … sorry to hold you for long I can see that you are putting your hand up go ahead.

Karen: well … some of what she has just mentioned is correct but what I disagree about is the way teachers should deal with the iPads implementation, first before I say what is nice and what is silly about this device, let me confirm that in my campus, teachers received enough training by means of understanding how to download and activate the apps, connecting the iPads with the smart boards and the Apple T.V which you can see here in this room( pointing to the T.V and the Smart Board that is there in the place of the focus group interview), all the other classrooms are equipped with similar devices to enable the optimal use of the iPads inside the classroom as well as outside the classroom. About the students I think well as I can see from my experience with them that they are even more brilliant than teachers in either using iPad apps that teachers have no idea about how useful are these apps I myself most of the time listen to and watch the students after I ask them to do certain task before I give them the possible iPad apps they are really creative , another issue is the way sometime they show unexpected creative ways of making use of iPads which I think if it is exploited properly by teachers and well-directed it will make iPads as a fantastic tool for teaching and learning. Thank you for listening ( yes but you did not explain what you disagree about ..) yes I forget sorry ah ah ah well ok the point I want to say is that it is the teachers responsibility to have a good classroom management otherwise students will misuse the time of the class whether there are iPads or not…an…and o (interrupted by Juan)

Juan: yah it is the responsibility of teachers but with iPads in place teachers cannot guess whether students are off task or on task during the instructional time for example I give my students sometime to use a certain app to do a task then when I move around I find some students are off task and doing ….. one of my colleague has just mentioned the misuse or what I could say expanding the game time as my students used to call it. So iPads can be useful if they are used like any teaching tool .. like a like for example the calculator you can ask the student to use when it is needed otherwise the class will end in a chaos and it will …will be hard to control a class of 23 students with such a distracting device especially if they have access to the net and the teacher cannot control this issue at all, I would recommend that teachers take the iPads and give them to the students whenever there is an activity or a task that needs an iPad.

Karen: but in this case you are with the idea that students should leave their iPads at school and they shouldn't be allowed to take them home

Juan yea why not if it is the good way to manage the learning process with the device.

Karen: well the M-learning won't be there then, I mean the reason why these devices are utilised is to activate the or em expand the teaching time or the learning environment scope which means students can still contact their teachers and colleagues while they are outside the classroom as well.

Moderator: ladies and gentlemen I hope you help in answering the suggested questions while you are talking about the iPads implementation.

Khalid: well as for me, I would like to thank you Dr. Mahes Insha Allah you will be, for this meeting I hope really if we could have such meeting regularly to exchange our expertise in this field as I can see that my colleagues here received enough training throughout their thought-out discussion and by doing so it would enrich the M-learning as it is called by my colleague here it would be more active and from a personal experience with the use of iPads with the students yes it is hard to control them but still if the kinds of apps you use the kind of activity the teachers use I mean if it is engaging then the students will easily follow the task again from my past experience as a team leader in my previous campus while visiting the teachers during the instructional time I can say frankly that some teachers have a kind of phobia from technology they do not want to integrate it assuming that it is a distracter rather than a motivator for learners. I can say that in some classes when teachers challenge the students either by the task or by the apps selection then students will do better than if you dictate them everything and you do not give them the chance to show their individual creativity. So to target your questions in the first issue yes I think that teachers receive enough training yet it doesn't tackle language development but still it paves the way for the teachers to go on choosing and implementing what suit the diversity of tasks, activity and the level of the students in terms of technology or in terms of linguistic competence. As you can see that our schools are fully equipped so the infrastructure is there I think. Thanks

Jessica : thanks yes it is not easy to wait that much time to take your turn to talk but it is nice to listen to you guys you really have an invaluable input. To add to what they have mentioned concerning the questions ya well I think we have a feasible infrastructure sometimes students forget their iPads till the last moments before they put them into the charging unit though it is available actually in our campus … an I do not know about the other campuses but here the wifi is sometimes down so in this case you lose the connection with your students, concerning the training yes we receive training and every year we have some practicum in the beginning of the year for some time I myself benefited a lot from the trainer on how to manage the files of my students and how to make an electronic portfolio using different apps like Edmodo and Showbie I think that all of my colleagues tried Schology where they can find a lot of materials they can exchange materials and recourses so it is really good to sent the assignment to your students before they come to class and give them enough time to prepare will at home you can use the features as you know of these apps to even instruct your students directly with your own voice (starts connecting her device to the Apple T.V to showcase her expertise in utilizing the apps on how to instruct the students using her own voice) so as you can see all of you can use this right (all agree that it is easy and user-friendly feature) using such features can help a lot as you can

see also how to follow up your students by giving them timed activities or tasks , you can also correct their papers and store them here. Concerning the language developments, I think there are other apps that can help in developing listening and speaking skills… I wish if the time is ok to go on and show some apps that are related to developing English language (interrupted well I think we will talk about that later)

Alex: thanks .. Doc .. it is really nice to have knowledgeable persons like you colleagues as for the training yea … I think that at the beginning of every year teachers have a training week or so during this week the trainers or they used to call them the MPU the master power users they help a lot in the way that we use and utilise the iPads properly and how to make registration or let's say the basics, well but what I like the most is the idea of having a MPU at every campus those guys are really keen on using iPads and they expose you to different iPads apps and how to basically use them but then it is your turn to go through these apps and try to make the most out of them to help in developing your students despite that fact that some students if not the majority are more experienced than their teachers we but what I think we need here is the mechanisms on how to let them direct their creativeness into something beneficial and can help in developing their listening and speaking skills. Concerning the infrastructure UAE is good at coping with the technology and the rulers are very supportive in this issue they provide their educational communities with the latest concerning the mobility of education and the utilization of iPads. one more point related to your last question about our level if I understand you well then some teachers are already experienced in this field while others are still novice but I think that most of those whether they are new in the system or old after three years in the STS, nobody stay they level you get into the system so more or less everybody had something added to his previous knowledge.

Moderator: ladies and gentlemen, thank you really it is nice and there are really valuable things to be exchanged with you. Ok let's go on with the second issue. In this topic I really appreciate if you could showcase your practical experience in the field while you are talking about iPads implementation. I wish if you can touch upon the following:

- How often do you utilize iPad in your instructional plan?
- Do you think that student should use iPad in every skill-based activity?
- What strategies can only be implemented by using iPad?
- How could you help your students develop their own strategies using iPad?

Jessica: you know the institution where we work, which I assume you are part of its system, is urging the staff to turn the teaching and learning environment into a paperless one, so we all agree that eventually we should use the iPads in our day to day teaching and learning or let's say the regular instructional plan this is one issue the other issue is that students do not have hardcopies of their books mostly they are asked to download their books using the bookshelf. For English, we have to download Cambridge Bookshelf as you all know for grade 11 STS we are using unlock series so this is another reason why we should have iPads in place every time in our

instructional plan. As for the used strategies and whether the students should use iPads in evey activity, I think em it is one of the requirements for the class to be successful is to be taught by using iPads (Juan jumped in) sorry for interruption, but it is not really an obligatory requirement, I mean some activities are better to be implemented without the use of the iPads, it depends on the kinds of the activity (Jessica take the turn back) yes but whatever the activity was, students need to have their own strategies to utilise this device otherwise why not making it like a normal teaching tool (I beg your pardon what are these strategies that you're talking about? Could you just give or show examples) well the strategies are re the ways ok from my personal experience, my students when I give them speaking activity I can see that they are using apps like iTranslate then they say the sentences in their L1 Arabic then they listen to it then they copy and paste the translated sentences and put them in their speaking sheet to say them so in this way they are developing a new way of using their iPads apps to cope with the situation. And of course there are other strategies em oh so this strategy can't be implemented without the use of the iPads.

Khalid: fine, it is really cool, starting from the last point that Jessica mentioned, I sometimes use this strategy with my students, but to be honest it is not always good. For example with the high fliers students I need them to produce language and think in the target language, as a bilingual teacher I think that this strategy may cause a what we call a reluctance problem that is to say students well keep thinking of their L1 so they will not have the mental processing in L2 so their acquisition of the targeted language will be slower and the produced utterances will no longer there due to the students mindset that they will find it there in the apps whenever they need it, (nice this is very analytical psycholinguistically ) indeed I did my Master degree three years ago and it was about psycholinguistic. You see that iPads can be a tool but sure not all the time and not with all kinds of students. I myself use iPads frequently with my students as everybody should because of the reasons mentioned previously, but I encourage my students to think I mean once they did something with the help of the iPads I encourage them to try different way without the iPads. Concerning the last question, yes we use different strategies with our students I for example use TED English subtitled while teaching my students listening skills I don't know about others I give them the chance to have their input I might add up to the list of the used apps…

Karen: I totally agree about the importance of infusing TED specially if they are English subtitled in this case we are encouraging our students to make use of the text and it will develop their listening as well as speaking skills. Once students are (Khalid interrupts) sorry don't you think that in this way you are making a kind of cognitive load (Karen takes the turn back) excuse me what do you mean I can't get you (Khalid) I mean that while students are listening thy should focus on the spoken discourse rather than the written one. Researches approve that concentrating on two skills for example reading and listening at the same time is putting a cognitive load to the learners.

Moderator: thanks Khalid, but cognitive load here is not harmful for the students although it lower the acquisition still it help in the mental processes in L2 as you mentioned before. Any way good point sorry Karen go on.

Karen: what I was trying to say is that students develop a strategy of making a concordance between what they listen to and what they read in this strategy they develop their ability to mentally recognize the utterance and associate it appropriately with the words so they develop their listening and afterwards they develop their speaking skills as a consequence of this I encourage my student to do so.

Moderator : Lora do want to show us something I can see that you are connected to the Apple T.V. yes please it is your turn. ( showing an app called "Speaking Pal")

Lora: as for the question whether we use our iPads frequently or not I can assure you that every teacher has to use his iPads everyday either to arrange the file of the students or to correct their assignments like Showbie or Edmodo or whatever the app is. As far as instructional plan is concerned ya I think they I mean the students have to be encouraged to utilise iPads for the reason that it changes the activity into fun while learning rather than just obsolete rot learning. According to my way of encouraging and fostering my students to acquire a new strategy in developing their skills, here I am showing an app called Speaking Pal it allows the students to speak out the sentences or the words and then the app convert it into one as you can see to written one then it gives its translation into the targeted language. This strategy can only be implemented by using the iPads therefore helping the students to develop such strategies will enhance their engagement in the activity and they will stay on task and it will also help them to be independent learners by and large this is the main aim of the M-learning as I assume right doc you are now the expert in this field (sure I totally agree) thank you am I talking too much?

Tariq: Concerning iPads utilisation, whether in our daily lesson arrangement or instructional plan or to follow up our students progress, iPads are frequently used. Due to the nature of the STS schools as a vocational school, students should use iPads because their books are stored there their home assignment are there as well they create their portfolios there so consequently they have to use their iPads daily. My personal view is that putting the students in such situation suits them a lot if they I mean the instructor and the policy maker decide on the terms and the condition of iPad use (interrupted by Khalid) I think that there is a document that the parents need to sign at the beginning of the year confirms that parents are responsible for the kind of use for the iPads and the terms that are there denote that once it is found that there is a misuse of this device it might result in confiscation. (Thanks Khalid yes it is there but we are not sure about the application of these terms and conditions)

Tariq: sure we all know that again we know that every time and then the principal with the help of the ICT teachers make regular inspections and sometimes it happened that they confiscate some iPads but two or three days they give them back to the students after they formatted them frankly as has been mentioned before our students are brilliant in this issue they might break the tracking system and break the censorship on their iPads and misuse them. Ok that is not our issue. The issue is yes our students have their strategies and even they sometimes help us develop our strategies to suit their level as I said they are brilliant of course not all of them. My

point is sometimes we use peer teaching that is to say we ask the brilliant ones to help their colleagues in developing their use of the iPads by that they end in good strategies.

Alex: I won't take much time I know that time is ripe so I will be so direct and to the point. As they all assert we use iPads frequently go on teaching and to keep a track on our students I mean to follow them up in their assignments and their activities. Students as well should use the iPads they really like to use it. I remember the days when students bring their books and they were really heavy especially for the kids in their early years at school, so the infusion of iPads into teaching and learning help the students to get rid of the heavy burden they are used to carrying all the time and I here say yea for the iPads in this sense. For strategies that students should develop (no I did not say they should develop I just want to know if there are any of these strategies) yes of course I get you point, but I mean they should develop strategies to survive in the arena I mean by default learners in this generation develop strategies to deal with these devices. So if the teachers use the iPads in their instructional plan accordingly learners ought to use these devices to cope with the kind of instruction it is by no meaning that you design your activity using the iPad and in the implementation you select different teaching tool to apply do see what I mean? Sometimes students help each other in developing skills in iPads every day one students comes with an idea on how to use this or that. An example is that one students teaches his colleagues how to do the assignment using the Adobe app that is by opening the document and convert it into Adobe document then it turns to be easy to write on it then they open it back in the needed document I consider this as a strategy and so on.

Fred: I usually hate it be the last one to speak you know because they already touched upon all the issues that I might say…ah ah ah ( no worries you can agree, confirm or add to what they have said or you can show us if there are certain apps that you use with your students) ok fine.. I can't deny that most if not all teachers in STS schools have to use the iPads in their instructional plan they prepare their materials before hand and it is well from my experience, I use the Dropbox app to store the needed handout and worksheets even the PowerPoint I intend to use I put them there to download them later at any stage to my students I again ask my students to download app it is really nice I will not take much time just I want to introduce it to you and in brief explain how you are going to use it, it is user-friendly and you can make a direct connection between the personal computer to the iPads (what is that app?) oh sorry it is "Doceri" it enables you as well as the students to share all kinds of files and videos, it can be more interactive if you want to use it as a smart board and then show your content or the students' onto the Apple T.V attached. Doing so, you are providing your students with the mechanism in case there is now actual classroom. You can also explain while you are demonstrating them the content. This, as a strategy, students can watch a video type in the next screen and take notes specially when working in groups whether inside the classroom or remotely. I think in this case we are achieving the main goal of M-learning right … and that is it.

Moderator**:** thanks a lot for these ideas. Now we will move to the last part of this focus group session. In this part I appreciate if you share your experience on how to use the iPads for the following points.

How do you think student use iPad to develop their oral and listening skills?

- What strategies do you use to help students in oral and listening skills?
- Can these strategies be best implemented using iPad?
- What addition does iPad have in developing students' oral and listening skills?

In these points can you please be more specific I mean it would be highly appreciated if you explicate your personal as well as practical experiences while teaching using the iPads. So who would like to start? Ok Fred you were the last one to speak now I think you are going to be the first one yes Fred go on.

Fred: well I think that iPads are the most significant tool to develop students oral and listening skills, some of my colleagues have mentioned that they use Speak Pal App others use TED with or without English subtitles, I myself use these apps but what is I think more beneficial is the special apps that are designed for this purpose for example "SpeakEnglish" it is an app that allows students to check their pronunciation by listening to the original sentences or utterances then they try to repeat till they do it right they then can compare their recordings with that of the app. Helping students to keep practicing this way before going on their presentation will provide students with confidence. I think that is all what students need during their speaking activities so by no means using iPads in this stage will help them a lot taking in consideration the instance of use for the iPads of course if there is a connection. Another way that I can see that students can videotape themselves acting as news reporter trying to create a report a spoken one of course then they can listen to them self and have a kind of self reflection so they can take that as an activity before they go on the presentation with time they will develop this skill and they will turn to be brilliant speakers. Of course there are many other apps but I will leave the floor for others to talk about their experiences and thank for being the first one to speak.

Jessica: well it is really nice what we have seen here is a kind of professionalism that we can't ignore the role of the iPads in teaching the two basic skills listening and speaking. Students basically communicate using Instagram, Facebook and other social media so by default they are keen on interacting with each other, our role here is to direct their interaction into a fruitful targeted tasks that is to say once I asked my students to form virtual groups while they were out when I ask them to do so I was thinking of Showbie as an app to be used since I introduce it to my students and they know how to use it very well, but I was suggested another method of interaction which is the use of the "Whatsup" yes here it has nothing to do with iPads but still although it is sometimes critical for girls in that age but I insisted to be the admin to control and keep a track on the students. Then we create the group and the first task was just to brainstorm how to introduce the new lesson which was about (it is ok but we want to know how effective was the way of interaction and is there a way by using the iPads instead) ok it was really fantastic my aim was to foster shy students to speak freely then we can keep a record of their sounds you know sometimes students especially girls feel shy and hesitant to stand in front of their colleagues and speak , so in this way I encourage them to speak and you do not believe how

progress I come up with these students. They prepare their talk before hand and then try themselves several times before they send out to the group another issue is that when they listen again to their recordings they become aware of their mistakes and how to avoid them next time. I can rightly say that this is a good strategy that teachers should encourage their students to adopt it. Thank you for listening patiently.

Moderator: thanks for your input it is really worthy. Yes Khalid what do you have?

Khalid: As you all know that iPads is a kind of portable computer with more features, so if it is connected to the internet or let's say wifi, it will help the students initially to search for information online. Part of this searching is the pronunciation of the difficult and unknown vocabulary. I consider this as a strategy that facilitate finding words and enable the students to make use of them easily. The other issue which makes vocabulary easy for the students as well is the generated iBooks of course I am talking about the English iBooks that have been generated by STS CDU Curriculum Development Unit helps a lot because the words are instilled interactively so once the students wants to listen to the word or words he just click it this facilitates the acquisition or the acquaintance of the new or the key words. Yes it is not a strategy that has been developed by the students themselves but it is a kind of support that is given to the students by the institution to make learning mobile and to drill the speaking skill. About my personal apps that I use with the students and I encourage the students as well as my colleagues here if they do not know them to try them, it is mainly depends on how the teachers use the app and to what extent they are experienced in using these apps. I will not take much time I will show you apps that can help a lot in speaking and listening as these two skills within the domain of mobile learning is interdependable. Whatever, the two apps are "Showme" and "iMovie". The way how to help students develop their listening and speaking skills using these apps is by teaching them how to infuse and create their own videos one of the features of the iMovie is that students can add topics to their videos they can merge more than one video and they can add their comments on the video. The part where they can develop their two skills is when they record their own sound as I did with my students when I asked them to have a presentation to talk about the environment so after I show them a video that I created using the iMovie, they were encouraged to create their own at that time I helped them initially in how to make a project using the app, after that they were really creative and they listen to each other's videos thus doing so will definitely help in developing a kind of strategy for the students to practice a national-geographic like videos. As for the second app, it is as I said "Showme" again this app helps in extending the teaching and learning environment and developing the students listening and speaking skills. Initially, teachers can use this app (demonstrate the on the Apple T.V and show the way how to use it) to explain to their students and give them oral instruction and lesson or task illustration then they can send it to them so students can refer to it when they need to make sure of something. On the other hand, the students themselves can use it to record their presentations then to demonstrate them afterward so this is as I see it is a strategy that students can learn from teachers or they can develop it themselves.

Tariq: well I will try to be to the point, em I mean I will try to answer the questions with some illustrating regarding the use and the strategies that I use to develop my students' oral and listening skills, of course, as teachers who are enthusiastic to integrate technology into teaching and learning, we should try to find alternatives for the traditional teaching strategies. Be sure that I am not here underestimating these traditional strategies assuming that not all learners are acquiring and learning through integrating technology these days. Therefore, as I have said we should as teachers to transmit and transfer the strategies to the learners to enable them to survive the M-learning environment, which means that what suit learning by using traditional strategies I hope you know what I mean, these strategies whether they are cognitive or meta-cognitive ones even in this sense yes they are still cognitive and meta-cognitive but the learning environment is totally different I mean by different the scope of this leaning environment is widened to transform the strategies from learning in a narrow scope which is here the classroom into a bigger and wider scope as a virtual learning environment. Thus the strategy should suit the using of the iPads. Well, it seems that I took much time than I planned for, sorry. Regarding the issue of how students use the iPads to develop their strategies to deal with the oral skills, I think it is a matter of Apps here so to talk about how students use iPad's apps to develop their oral and listening skills or how we helped them to adapt a kind of strategy that suit their new way of learning which is the M-learning . For me, developing the listening and speaking skills are integral and they are interdependable skills so once you use a certain app to develop speaking the same app I think can help again in developing the listening as well. Let me demonstrate some of the apps that I recommend the students to use and I myself use to develop my skills you know we are all learning in one way or another (Connecting to the Apple T.V to showcase his apps). This app is very interesting and interactive as well (pointing at "Learn English By Listening" app) this app as you can see here is an excellent strategy you would use with your students look here for example is divided into different levels from basic to advanced and it helps the students to choose the level of difficulty they want to challenge. Once the student chooses the level then they can listen to the text, they can also choose a word to be pronounced correctly they can answer some comprehension questions. So as you can see it is a good strategy to show the students such an app and the way to develop students' listening skills is to let them practice more and more afterwards they can use the level of challenge that suit their proficiency. The same developer again provide the learners of English as a foreign language with different apps to develop their grammar and vocabulary so if they are interested they can download the whole group and use them as well. By all means these strategies can't be applied without iPads as a teaching tool to help in developing the learners' virtual learning environment.

Karen: as far as I know, and from a firsthand experience, students primarily need something to imitate along with their listening and attempts to speak, so TED app is the best strategy that I encourage my students to use and practice to develop their listening and speaking skills. The issue with how teachers use this app. For instance, once you activate the English subtitled, then students, despite the assumed cognitive load, will try to imitate the fluency and the performance of the TED speakers and the most important thing is the relevance here. I mean when it comes to the content they will see and act according to the way the speakers illustrates his/her content

within the allowed time comprehensively. So, it is by no means that using such an app will provide the students with opportunity to develop their listening and speaking skills as well as their time management. If this to be covered theoretically, we would draw on Piagetian theories relating to this issue, so to put it clear, students or learners in general need to assimilate before they acquire the intent. I spent a lot of time train my students to try to imitate the TED speakers and choose what suits them in this concern. Another app that has a great value for learners to build their own strategy to develop their oral and listening skills is "Speak English". This app helps the students to go through these two skills independently. Let me show you how can this happen. (Connect the Apple T.V to demo her app and how to use it appropriately) and now look at this app, as you can see in the first part students are exposed to a word level speaking then they can choose the sentence level and go on to reach the conversation level in which they can record their voices and relisten to them again so in this phase it is a strategy by which they develop their skills. So applying these apps and having students engaged by varying the teaching techniques could help as I see it a lot for developing and building learners' own learning strategy.

Lora: I really now appreciate the situation when one is the last one to speak em I mean it is not easy to recall what they have said and try to avoid using the same things again and again. So I will try to answer the questions briefly and thoughtfully. Interestingly, students may use different strategies than what we expect, it is fun I mean they might listen to English songs while they were relaxing and some students are ostentatious, I mean they boat that they are listening to English songs in order to show a kind of social status. So I sometimes ask students to try and find out the words of these songs or lyrics to foster their understanding of difficult enunciations. So it works well with some students that this strategy followed by listening comprehension exercise. After a period of time students will be acquainted with the accent of the native speakers so they will develop their listening consequently their speaking skills afterwards. Concerning the use of these strategies with iPads, I think yes the availability of iPad is an asset in this field it can really enrich the students' learning environment. I do not know who mentioned the instancy; yes it is the point that the use of iPad is a simultaneous process. All in all iPad is nowadays is the essence of teaching and learning if it is meant to have ubiquitous learning that expand the instructional time and place. Thanks I hope I get it done shortly.

Juan: according to the use of iPad for developing the learners' oral and listening skills either they use themselves or teachers can help in doing so, I think it is a tool which if used appropriately, it can add something to the mobility of teaching and learning but sometimes the strategies are there whether there are iPads or not so it is not the iPad who has the superiority here it is the instructor or the learner himself who can adopt strategies and put them in place (interrupted by Alex: Sorry for that but is clear that iPads can't stand alone; I mean if teachers or learners do not direct the use of the tool which is here the iPad nothing will happen).

Juan: ah ah I see but look ok I think you misunderstand the point sorry, but let me put it differently. The issue is related to the engagement, if the learners are engaged so they can involve themselves with activities that can help in developing their oral and listening skills, but

once they are left alone with the iPads they will opt to use it only for entertainment. I hope it is clear here.

Alex: no no it is not that way these devices should be utilised. These devices are so called the M-learning or the mobile devices for learning. That is clear that these devices should be integrated with a kind of curriculum design plan or within an instructional plan, it should not be left open for the learners to use freely. I think once there is a plan for implementation and once teachers are aware of the importance of this device and how to put it in place in this case only these ubiquitous devices can be helpful to develop the learners' oral and listening skills.

Juan: I know what you mean, but what I really meant is that teachers and learners should have the mechanisms of dealing with these devices. They should know the specific apps that can help them develop their skills. That is the idea.

Focus Group 2 Transcript

**The moderator:** good afternoon ladies and gentlemen, I would like to take this time with the opportunity to welcome you here and thank you very much for attending this session. My name is Zohair Zarhoni of course I am not exactly the researcher but the researcher is Dr. Mahes AlOlaimat who is investigating the effectiveness of implementing iPads in developing STS students' oral and listening skills and whether by using iPads or any other teaching tools it will enrich the learning environment. He is aiming at finding the learners and the teachers' readiness as well as the teachers' strategies and the learners' practices that can be best implemented using the iPads applications "Apps". Briefly, I would be thankful if you could feel free to express your views and rest assured that your confidentiality will be maintained and your names will be replaced with pseudonyms. The scripts of this focus group interviews will be only used for research purposes. So welcome once more.

The moderator**:** initially, I wish you discuss these concerns and be sure that your inputs are highly valuable to me and your opinions can make difference in the future plan of technology integration into teaching and learning environment. The concerns I hope you thoroughly discuss are:

- Do you think that teachers and students receive enough training to best implement iPad in teaching and learning?
- Do you thing that schools have the technological infrastructures in all campuses? If not what is needed to best equipped?
- What iPad strategies can be deployed to enhance the learners' oral and listening skills?
- Through your experience how effective the iPad is in teaching oral and listening skills
- Would you recommend any apps or strategies with apps that might help in developing the learners' oral and listening skills?

Moderator: Please could you use the cards in fort of you and write your names to facilitate keeping a track on the turn taking and as a reference for later transcription. You know this focus group interview will be videotaped. There, we have coffee and tea, please feel free to make yourselves feel at home. (Time for coffee and tea was given meanwhile participants were writing their names on the given cards).

(The moderator tries to orientate himself with the names of the participants. Starting from this point, the names are replaced with the given pseudonyms for confidentiality purposes. The names of the participants are as follows: MPU1, MPU2, Subject Specialist, F1, F2, F3, M1 and M2)

Moderator: who would like to kick the ball? Of course you are free to comment at any point during the interview it is a kind of group discussion. So, feel free to comment by showing your hands then the turn will be given to you, thanks again shall we start. Yes who is gana start?

MPU2: Ok, I will start if they do not mind. Introducing iPad into learning environment facilitates the learning process and utilizing state-of-the-art tech to get a better quality of learning outcomes as well as education. Usually I – as an ICT teacher- use the iPads to enhance the education process in different ways such as: □□□Having the books in interactive electronic format (i.e. iBook) that is distributed on all students' iPads, where the student can do lots of editing and formatting on, also practicing built-in quizzes and interactive activities in that iBook where it is auto-corrected after the session is finished. □□□Boosting students' interaction and collaboration and sharing information through Apps specifically developed for that such as Edmodo, See.Touch.Learn, and absolutely many more. □□□Adding fun and attraction on hands-on and projects, for example students feel excited if they created an interactive movie using iMovie App that also opens promising horizons for any interested media learners. □□□TeacherKit is an awesome App for the teacher where a full class organization and management (i.e. track the attendance, grades and behavior of students) found in one single easy tool. □□□Broadcasting through WiFi is another facility that Apple provides the learning environment through Apple TV that detects the teacher's iPad and presents to classroom.

On the other hand, I worked as a Master Power User (MPU) in training the staff on how to use iPads, especially those who are new to iPad or newly joined the team, so we train them from scratch how to turn on and off the iPad to how to create, secure and backup their accounts and data with a lot of tips and tricks delivered. Moreover, introducing useful apps that can be used in their subjects, for example KhanAcademy, Numbler Math Game, FlipBoard, Scoopit, and many other subject related Apps. Moreover, MacBook, where the majority of staff have no previous experience with MacBook, the Operating System tools and interface so we give them enough training on how to use these new device again the way hoe to utilize the Apple TV and the useful software and tools to be deployed and used in classroom. We also train one core teacher to act as a MPU for troubleshooting any technical issue and how to resolve it; keeping the staff tuned with the most recent technology and Apps as well as the extracted strategies and practices. Thank you for listening.

MPU1: I might start from the first beginning. Few years back, our school used to offer both teachers and students with MacBook Laptops. I tried to utilize the provided technology to the maximum. It took me a while to train students how to use their own laptops and how to use technology to support their learning but eventually I did it. In my class, I taught the students to create their e-portfolios on their laptops and to save all their electronic books and assignments in an appropriate way. I used to give them their assignments through email and they used to do it and turn it in the same way without the need of printing a single paper. I even was the first teacher to use an iPad in the school. I was showing my presentations using an app called Quickoffice. Moreover, I was grading my students through a grading app called Gradebook. When we used to be in parents' meetings, I used to hold my iPad and open the grade app to explain to the parents their kids' academic level in my subject. My vice principal was supportive as I was telling him how technology is beneficial to the learning process. He even asked me to do weekly professional development sessions to all teachers and I did. I taught them how to use Dropbox (Could computing) to save and share their documents, how to use e-book readers, YouTube to get or upload tutorial videos, and how to create e-portfolios to organize the documents and files of their subjects. This was my biggest challenge as many of these teachers

never used tech in their lives. I was patient and along with the PD sessions, I used to visit them in their classrooms during my free periods and facilitate their use of technology.

A year later, our school started implementing an e-learning project. I was delighted that finally the management came up with this decision and it was mainly on integrating iPads into education. Each student and teacher got his or her own iPad. Our school contracted an education solutions company to give all the teachers including myself professional development sessions on how to use iPads in particular and technology in general to facilitate learning. These sessions were helpful and have paved new paths for me towards the effective use of technology in teaching and learning process. Later on, I and other technology literate teachers were assigned by the school management to give more advanced training sessions to our teachers. We gave them weekly sessions that gave them knowledge and skills on how to use tech in education. These sessions included but not limited to iPad basics, Google Docs, Cloud Computing, Apple TV, Popplet (Mind Mapping), Good Reader, Notes Plus (notes taking), Nearpod, Prezi (Presentations), iBook, iBook Author, iTunes U, Learning Management Systems (LMS), SAMR Model, TPACK framework, Mac OS, copyrights, search engines, iMovie, smart boards, interactive boards and many more. The results were astonishing and most teachers started using technology effectively in classrooms. Moreover, many of them started to search for new tech tools to use in their classrooms. They used to come to me asking to check this and that. I was so happy to see that most teachers have taken what I was training them on seriously and they even searched and asked for more.

F3: Concerning your first question, I don't think so. I think the iPad is still used as tool for an e-book and without proper internet security. As for the students they see iPad as a toy more than a tool for education. They spend much time on off task activities and using social media apps rather than looking for something more important to them. Then um…. as for the second question, you know I will try to minimize the issue well, in the first internet security, where we can block students from downloading social media and other sites, where they can watch videos. I think the schools need a broader bandwidth for the amount of internet traffic to control the digression of the students. Schools need to understand that not all the students are equal in their understanding of the use of this technology. I myself sometimes find it is good for me to use the iPad with the students while other times I guess it is just a distraction and a waste of time for both teachers and students as well. Concerning the apps, there are a few good apps that students can use to practice their listening and mostly free apps. One of the most recommended apps is the use of TED talk with the students. As a strategy, I used to use this app and divide the activity into three phases in the first phase, I ask the students to listen while they are trying to get the gist or some ideas from the talk after that I provide them with some question comprehension ones of course. During this phase I try to measure their understanding without the interference of any facilitating tools which I will talk about later on. Then I ask them to look at the English subtitles while they are listening and go back to their notes to either elaborate on them add explain or do whatever they think it is missing from the first phase. In the last phase, I ask them to look at the Arabic subtitles to check their understanding. They themselves can now realize that this is a good strategy. After some time I realize that the variance between the first and the final phase started

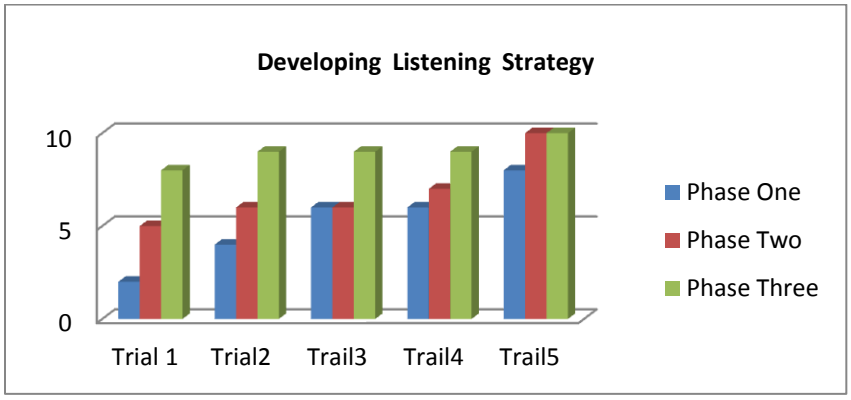
to be minimized. So you could frankly say that this is a good strategy if they want to develop their listening skills. The role of the iPads is clear now if we want to implement such strategies. Well, it is a good tool for independent learning. Students can practise on their own to improve their skills. Another app that I have used for several times to develop my students language competence is IELTS listening practice app with my students and it helped them a lot. Also they use their iPad for recording their voice and practising their speaking, I know there are more apps out there that can be used, I need to explore more.

Subject Specialist: well as it is part of my job to maintain the fair and the consistent use of iPads within the institution, I put together the efforts of individual teachers and reproduce them as a one joint effort concerning using the iPad apps especially for listening and oral skills. If you your time allows I can share with you the updated list of the apps that I come up with recently.
The moderator: Sure, please go ahead (She demonstrates on the Apple T.V the list of the apps)

Subject Specialist: These are the apps that we managed to gather from the teachers and from my own experience while I was making observations to some teachers who I think are brilliant in utilizing the iPad apps and you could rightly say that they either use the iPads as tools to develop the learners listening and speaking skills or use them as a strategy to provide the students with the suitable and the feasible apps to keep them engaged in on hand and to prepare them for a deep strategy for the extended learning environment em or what to say to apply the ultimate benefits of using iPads which sought to be the mobility of these devices. These apps for example are exclusively used for developing the learners' listening and speaking skills. A list of the apps should be added here later on:…. As for your previously mentioned questions, I think you do not mind if I did the same my colleagues and go through them one by one to highlight the important points about them and then to state my personal view as well as the view how the institution envisioning the use of these devices in the future or … or let say the plan they are intending to apply to reach the standards of the 12st century's learners and what are the skills that these learners should acquire. I will show you that these skills are now inserted in the curriculum documents and in the blue prints of the STS's instructional plans. (The documents are shown and as a valid data the researcher took a copy to be included as references for the planning to infuse the iPads for such skills.) As you can see and definitely say that these skills are deemed to be implemented by infusing technology, add interactivity to the use of technology and give this integration the sense of mobility or ubiquity. Back again to the questions, although I think that I answered some of them implicitly, still I would like to highlight some points here. As per the first two questions which talked the issues of training and infrastructure for the use of the iPads in the STS schools, I think whoever has been in the system for more than two or three years would say that they really receive a good and fair training from the CDU myself and colleagues in the CDU or from the MPU, and they can confirm that as two of them are here and as you have just heard from them. For the infrastructure, I certainly confirm that the campuses are all equipped with the latest kinds of technology infrastructure. Dr. Mahes himself could assure that throughout his observations.

As per the rest three questions, I will start from the last one which I think that I gave a full answer for it and here is the list. For the iPad strategies, here it depends on the teachers themselves and their way of perceiving the iPad. For many, iPads are just tools like starboards or like any other tool to be used in teaching. However, some teachers are creative enough to turn this device from just a tool into strategy by itself. Concerning the kinds of strategies that we were talking about in the margin of our meeting last time, I remember that you asked me about whether these strategies are surface or deep ones. I will give a clear example to instantiate the my understanding of these two kinds of strategies. As I see that there are surface and deep learning strategies but to what extent they are applicable the iPads, I will let one of the teachers whom I observed teaching listening skills….. who happened to be here fortunately um I don't know shall I talk about this or give him the floor to talk about how he planned for that and then implemented it. (She mentioned the name of one of the male teachers who happened to be one of the focus group members). But before he has the chance to express his expertise, let me answer the last question as I must leave for a meeting. According to the effectiveness of the iPads in teaching oral and listening skills, I think they are they are really effective. Moreover, teachers who are well acquainted with the implementation of such devices could say that. And you will see while you observe the class room dynamism how this or that activity be best implemented if there is an iPad integration. Thanks for listening and I am sure you will like it… I mean the way one of the teachers apply the iPads in teaching listening skills. See soon please pass my regards to Dr. Mahes.

M2: Yes thanks my dearest supervisor, I really appreciate it. It was a good endeavor. I have all the data if you are interested to see them. It was kinds of an action research er not exactly a real one I mean it is not worth disseminating or publishing. Actually I wanted to know based on a researchable data whether the use of TED talk affects the learners' level of comprehension and understanding afterward. So I decided to divide the task into three main phases. In the first one, students are supposed to listen to the TED talk without the subtitle at all then ask the students to take notes then I test their understanding and to what extent it was easy for them to answer the comprehension questions then I keep a record for different students. In the second phase, I ask the students to enable the English subtitle. Now students are supposed to take notes and check their previous notes and again check their answers for the first task. Finally, I ask them to enable the Arabic subtitle to fully understand the content of the TED talk. Then do the same thing they did in the second phase. I discovered after I tried this strategy with them for five times that in the last three times there less discrepancies between the first and the last time they listen to the TED talk. If you do not mind I will show you this table in which I summarize the results of my mini research.




I think this chart is self-explanatory one so you can read it easily to figure out the development of the listening skills. I can say um look definitely say that it is a good strategy and it will help in developing the students listening and speaking skills as well.

Moderator: You are right, but I want to know how could measure this, I mean how you could make sure or validate these results do get my point.

M2: Well, it is not so complicated process. I gave the students, and they were 10, certain questions which are designed based one Bloom's Taxonomy to check their first understanding if the language of instructions is not their mother tongue. I registered every time how many students mange to get it right so as you can see the final trial was the most successful one as the student get used to listening skill. So I hope you try it or anyone can to either replicate my trials or refute them and in each cases that what happened to me. Thanks.

Moderator: Thanks, it is really interesting and beneficial. Is there anyone else with such practical strategy? Yes, my lady. Go ahead.

F1: If I knew that this might call a strategy, I would participate from the first beginning. Ok. I tried with my students something different which is an "App" it is "Quizlet". Actually this app is very helpful in teaching practicing and testing the students. Once you create account, you can easily add the class you want and enter the names of your students. This app is basically used to create quizzes, but still you can use it for teaching and learning strategies. You can drill vocabulary, check spelling and so many other things. Another app is called "Dragon Dictation" it is a strategy by itself. You can use it to measure the students' pronunciation accuracy. Students can record their sentences or words then they check if it is rightly transcribed that means they are accurate. So, we have a lot of apps that can be used as strategies themselves.

According to the infrastructure, we really in need of a kind of servers that can be controlled by the MPUs or any authority that ban the students from entering the social media sites like facebook and twitter and such sites. Again we hope one day that Apple Company or any other apps developers to create an app that keep track on the students while they are working inside the classroom if they are on task or off. If these things happened then the use of apps and iPads will be invaluable tool and as a strategy by itself which will help a lot. For the questions that are concerning the strategies and the practices from both students and teachers, in this issue it

depends on the teachers and students themselves and how they are acquainted with this technology. I mean it is not only whether they receive enough training or not it is basically if they really believe in M-learning implementation and feasibility and effectiveness. To the best of my knowledge, teachers need to be persistent that is to say they need to keep it up and not easily condemning the new technology they need to insist on the integration and they need to instill in their learners that these are the features of the 21st century's learners. I hope that I touched upon most of the critical issues concerning your questions and I hope you all the best with your studies.

M1: Thank you very much for giving us this chance to share our expertise and to benefit from the application of M-learning and see how it is implemented from different perspective. As for the first two questions, it is easy to tell whether schools are well-equipped or not and as I think that most of the STS schools are so. Yet concerning the training that teachers and learners receive, I would confirm my colleagues' point that it depends on the campus. That is to say if the staff in the campus are into the issue and they want to implement it professionally, definitely they will seek help and support from the MPUs to show them how to do it the right way. But what is happening is that teachers receive training and sometimes they don't put this training in place or once they try something and it doesn't work with them they started give generalizations that this technology doesn't fit into the system. Other teaching staff is keen on traditional teaching and they are not aware of the presence of technology in every aspects of the life so they have a kind of mentality that governs all they teaching methodologies. They are not willing to adapt to or adopt the new ways of teaching. In a nut shell, they need to make a kind of diagnostic or needs analysis for the staff to check their willingness and their acquaintance as well as their adaptability to the new features of the learners despite their frequent success in the years where they were gifted teachers.

As for the last three questions, yes there some strategies that colleagues mentioned but let me be more precise in the way that some teachers consider the iPad apps as tools whereas others consider them as strategies. I think that if the apps are designed specifically for a certain skill it is a strategy otherwise they are only tools. From my own experience as an English teacher, I used some iPad apps as strategies for example "Toontasitc" which I use as a strategy to develop students' speaking skills the benefits of this app is that instead of making groups to act out a certain scene, individuals can create their own characters to act it. The app is generated to help students of all ages to make learning fun. So instead of asking students to read and practice a concrete part of role play, ask them to be divided into pairs or groups and act the scene, let them have fun while they are learning. Learners are developing once you are involving them in making the pedagogical scene themselves. That is supported by a large body of literature and a lot of theories insist on the learners' involvement in the development of their learning. Here in this app, the students can create the sentences by recording their voices, change these characters into animated ones choose the context and implement it in their role play. What I notice is that learners like this for all the classes I tried this with, they stopped feeling that they are detached from the learning content specially the speaking skill. Students do not want to speak or act. Some of students' personality is introvert so they are not in the mood to stand and talk, but once I get

them involved I creating their own characters and generate their own story, of course the generated stories are relevant to the content of the lesson but they have the freedom to do them they way they like. It is really fun and beneficial at the same time. According to my recommended apps for teaching and developing listening and speaking skills, there a list that has been sent to all campuses as the subject specialist has just mentioned. Students can make use of them and teachers can ask about the benefits of this app or that to learn how to implement them. Thank for listening I hope that I answer some of your concerns.

F2: thanks for lastly I am given the chance to speak,(interrupted by the moderator: you have now all the chance to say whatever you want to say my lady no one will say anything as they have their turns already) ok thanks once more. I will not answer the first two questions because I do not have anything to add to what they have said. Thus, I will directly talk about the issue of iPad implementation and whether it is effective and to what extent it is. I think it is really interesting and it is effective if learners and teachers have clear goals for implementation. If students are motivated to use the iPads in an effective way, it is not only the iPads any other M-learning tools can be beneficial for them. But the problem is that learners in our schools have let me say a wrong stereotypical image about iPads and M-learning devices. That issue has started with the students while they were preschoolers, while they were at their homes they used to use iPads as a toy so it is difficult to convince them and to change that image I here confirm that this is one of the demerits of the digital age or the digital natives as you call them. So in this case, we really in need of an app that allow for the teachers to control the students' iPads and force them to be on task or at least once they are out for a game or chat it can tell that. For the time beings, it is necessary to manage your class having this issue in mind and to partially overcome this trouble you need to involve the learners in the learning process. I myself for example I use games as incentive for the students. once I ask them to do a certain task, if they finish it within the allotted time, then I gave them time to go and play what they want in their iPads, yes it get into troubles sometimes but at least I got my students motivated at the end of the day so u can teach them whatever I want. Other times I make a competition using the iPads for the students, yes you can rightly say that these are activities that can be implemented without the iPads but here they applied to manage the classes which are already have iPads. Thus, using iPads as tools can be managed if you as teachers know exactly how to control its use as a toy. According to the apps that I recommend as my colleagues mentioned there is a list you can look at it and choose the apps that you prefer and try it. And thanks for this valuable session.

Moderator: thank you all for your participation I hope to see you soon I think you do not mind if you are observed to see these things in practice, please if you want to go further with us and let us observed your class while teaching leave your name the campus and the preferred time for visit. Thank you again

## 8.2. Appendix B: Students' Questionnaire.

Dear students,

You are requested kindly to complete the following questionnaire. There will be no risk on completing this questionnaire and all your responses will be maintained strictly confidential. This questionnaire will be used only for research purposes. It may take you few minutes to complete it. Be sure that your opinions are very important to me and they can make difference. Your participation in this questionnaire is voluntary and highly appreciated.

**Part one**: Choose the number that indicates your opinion. 1= strongly agree, 2=agree, 3=not sure, 4= disagree and 5= strongly disagree from the following items.

| No | Statements | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| | I am confident that I can… | | | | | |
| 1 | use iPad to navigate the internet to find information relevant to my class | | | | | |
| 3 | use iPad to take photos or videos to be used in the class | | | | | |
| 4 | use iPad to read and understand content | | | | | |
| 5 | download and use application on iPad | | | | | |
| 6 | use iPads to participate in group discussion | | | | | |
| 7 | use iPad to send my assignment | | | | | |
| 8 | use iPad to listen to audio and play recording materials | | | | | |
| | I think that …. | | | | | |
| 1 | I am interested to learn by using iPad | | | | | |
| 2 | iPad is a waste of time | | | | | |
| 3 | iPad can make me more involved in learning | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | the use of iPad can simplify learning | | | | | |
| 5 | using iPad I spent a lot of time off task in class | | | | | |
| 6 | through iPad I can learn after school hours | | | | | |
| 7 | iPad can help me answer difficult questions | | | | | |
| 8 | iPad is not the only helpful technology | | | | | |
| 9 | iPad can help me learn beyond classroom | | | | | |
| 10 | iPad makes learning easier | | | | | |
| 11 | iPad can replace any other technologies | | | | | |
| 12 | using iPad can save time and efforts | | | | | |
| 13 | I feel comfortable to learn by using iPad | | | | | |
| 14 | I do not use iPad out of classroom | | | | | |
| 15 | iPad is an interesting anytime anywhere learning device | | | | | |
| 16 | English is much easier by using iPad applications | | | | | |

**Part two**: Choose the number that indicates your opinion. 1= usually, 2=sometimes, 3=not very often, 4= rarely and 5= never from the following items.

| | Have you ever used the iPad to: | | | | | |
|---|---|---|---|---|---|---|
| 1 | download an application that helps you learn something new | | | | | |
| 2 | look up something that you do not know or understand in the class | | | | | |
| 3 | engage in social networking or group work | | | | | |
| 4 | write notes to remind you of a homework | | | | | |
| 5 | read an article or a text | | | | | |
| 6 | share a picture or a video with teacher or classmates | | | | | |
| 7 | play an education games | | | | | |
| 8 | listen to an exercise and answer the questions | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | develop speaking activity | | | | | |
| 10 | help you in your presentation | | | | | |
| 11 | help you in your listening practice | | | | | |
| 12 | submit any assignment | | | | | |
| 13 | communicate with classmate out of the class | | | | | |
| 14 | chat with English native speakers | | | | | |
| 15 | watch English movies | | | | | |

What is your opinion of using iPad in teaching oral and listening skills?

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Based on your frequent use of iPad, what strategies do you usually use to develop your oral and listening skills?

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If there is anything you would like to add, feel free to jot it down here.

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Thank you for participating in this questionnaire

## 8.3. Appendix C: Semi-structured interview protocol

The interviews are expected to extend from 25 to 40 minutes with the Master Power Users (MPU), 30 minutes with both the selected teachers and the curriculum subject specialist.

The place of the interview will be decided upon the interviewees' convenient time and place.

The expected questions for the interviews are as follows:

4. What do you think of iPad as a teaching tool?
5. Do you think that students and teachers are ready to implement iPad in teaching and learning?
6. How can you best implement iPad in teaching listening and speaking skills?
7. What do you think are the benefits of iPad in teaching oral and listening skills?
8. What are the obstacles of iPad implementation in STS?
9. How do you describe your experience in teaching with iPad?
10. Do you think that iPad is an effective tool in developing students' oral and listening skills?
11. Based on your experience, what strategies/ practices do you use to teach oral and listening skills?
12. How do you see iPad as a mobile device in the future of UAE vocational edication?
13. What would you add to the context of iPad-based teaching to be best implemented in STS?

Interview transcript

Interviewee1

Q1:

I think if it is used correctly emmm it can be very helpful for the students, I personally em use iPad in my students in grade eleven ESP class and they are very professional in using it.

Q2:

I emm I think we are ready but we do need a little more practice in actually using it in classrooms.

Q3:

It is really good for speaking because I get the students to record themselves and then playback and then they hear themselves so they can hear emmm any mistakes in pronunciation so they do it again so it actually makes them more comfortable when they record themselves because initially they are not very comfortable in listening to their own voices but once they have done it few times they will be more comfortable and gain more confidence.

Q4:

Emm it is something that they can do in their own time outside the classroom as well as in side in the classroom for example especially with listening eee and speaking as well. We restart activities in the classroom and then for the weaker students they can go over for the same activities in their own times at home.

Q5:

I would say mostly distraction. It is a distraction for some students who just want to play games and they find it very hard to be doing something in the iPad and listening to the teacher at the same time.

Q6:

Actually, this was my first year having students who use iPads instead of laptops emmm but I find the students are very well at using the iPads for everything than laptops so I have had no problems with them.

Q7:

Emm yes I would say it can be a bit restrictive in the Apps they can use for listening and speaking emm but it is quiet good yes ..for these skills.

Q8:

Emm we go through er once I give them instructions on a specific task we do an example together and then I usually pair them up in twos so one of them uses their IPad for videotaping emm so they have a look at themselves with video and audio and then they playback and then they have to redo it again depending on the points that they need to correct.

Q9:

I think it emm must play an important role because students now, there is a point to use such device if it may have many many uses if it is used properly.

Q10:

Emm videotaping, aaa an audio and voice recognition playback and all these things.

Interviewee2

Q1:

I think it has a great deal of potentials.

Q2:

I think that teachers are ready to implement it, and for the students I believe it is more based on what is the students' particular goal is, some students are ready and some students are not

Q3:

Ammm Well right now I have been using it for as a way to give the students their PowerPoint presentations and give them some access into the Dropbox for extra resources from the books no matter what they have access to I use as a way to send worksheets and homework to students as a collective location for students to submit their work to me.

Q4:

A well it is very easy to send I can do the work once and I can send it to 20 30 40 100 students and they all have one localized place to consider it to send the work to me so it is a kind of very much centralized location for everything

Q5:

The biggest obstacle is that for students who are not interested or engaged it becomes a distraction to them.

Q6:

It can be mix for the students who utilise the tool to the best of their abilities it is fantastic it is far above better than having a book and ..etc and for students who are not engaged and who do not want to learn, then it becomes negative in term of getting them to work in.

Q7:

Absolutely it has far more potential than any workbook or any paper based learning tools.

Q8:

Mathematics is vey much perceptual so I try to use it as best as I can to show them practical applications and give them a better understanding for example in geometry at least we can show them what the shapes look like and where do you find them in nature and how they are used in building constructions …etc

Q9:

Well a a This is just where everything is going towards smaller and more compact devices and there are going to be more and more common places and students have great ease of using them and they become more and more universal.

Q10:

In my opinion I would limit what these students are able to put on to it. I think it will be better if the administration willing to control what students are able to load into it for example new games as those which are distractive elements so if they could limit their internet use and their Apps that can be great help.

Q11:

We have the books on their currently a couple of physics based apps that we use Showbie which is where I put my worksheets and have their work submitted to me those are the most ones I use.

Interview3

Q1:

Emm aa it has got pros and cons.. and then a lot of things with I Pads are pretty good. Emm you really got to control the use of the iPad to get the full benefit then if it is not controlled the kids shut off and do not listen or concentrate on the iPad rather than the teacher so as long as it is controlled iPads can be effective.

Q2:

May be not all of them .. I think they need guidance it is easy to use iPad and the teacher can see all of them got an iPad but it is only through experience to find out what .. how to deliver like aa like a period with the iPads and where the iPad can be used effectively where it will assist

teacher rather than decrease the effectiveness of that session so the teacher needs to be aware of that and practice to makes perfect you got to sometimes think through the teacher to and the deep end and a very cognitive realize what you need to do different so that the iPad is helpful rather hindrance.

Q3:

Listening and speaking …for listening …. A um sometimes we deliver a subject to a student and they don't tend to listen unless they got something to look at you do this all the time when you do a powerpoint presentation even for adults… you give them something to read so as you talk they can read something so you use their two senses for them to remember what they listen to the same with the students specially with boys they … you can talk to them but as long as you have got a visual tool that can assist on what they are listening for them to remember and all through staff I Pad is good when you do speaking type classes where you got the students have conversation and record them in the iPad then they can watch again on their own or they can watch it as a class and you can what was good and what they did bad it is very good that way because it is instant you can record it and then watch it straight away.

Q4:

Ammm I think that students can hear themselves talking instantly they record then they watch it they can watch themselves and listen to their performance and there is no delay… instant ratifications they can tell straight away how good they were and how bad they were.. in that way iPad is really good and everybody can use it the youngest kids know how to use iPads how to record their voice it is very good and easy to use generally it is very effective.

Q5:

Too much freedom is given to the students on the iPad too much freedom.. they are allowed to take iPad home the analogy behind it that they have got homework and they need to take iPad home to do their homework … but if the student were not allowed to take iPad home then we will give them different kind of homework which does not require an iPad they have the iPad for too long and when they take it home they start to download other things games so when they come to school the game they were playing last night they still playing it you know and they tell their friends about it oh that is a great game and before you know there is more games on the iPad than educational Apps so you really need to control the exposure to the iPad.

Q6:

Sometimes some class can be good but overall if iPad wasn't there will be more teaching.

Q7:

For some tasks and not for everything just for some tasks so going back at the same thing the iPad should be given to them for the specific classes or specific lectures and then it should be removed they do not need it any more for the rest of the aaa the session they might not need it for

the rest of the classes and whenever they need it, it can be provided, it is like needing a pen every day they use a pencil but whenever they need a pen teacher gives them a pen and they use it or if they need a calculator or sometimes they are given a calculator and they use it and then they give it back again, they do not always need a calculator same as the iPad they do not always need it.

Q8:

I fee I tried to make the iPad a bit interesting for them to show them more tools than games so there is a camera on it and on the apple laptop you can project whatever on their cameras you can project it onto the projector and the kids can walk with the camera and whatever the camera is looking up they can see in the projector. Amm it is a little device that is used made by Apple called Apple TV and it allows them to send images to the screen amm that is really helpful because some of the kids are interested you know you got their attention they no longer interested in the games they are interested all of the camera can do everything though one of my classes I was teaching them how to build a computer and I wanted to make sure that they were listening and when I ask them a question they would replay so I was using the camera to zoom in to what I was doing so they do not have to stand around my desk they just sat on their seats look at the board they could see what the computer look like and what I was doing and then they would work on their own computer that was in front of them am I could throw out questions and someone would give me an answer and I was able to use an iPad as an effective tool if I didn't do that they would just sit and play and I would be talking and may be one student would listen the rest will be playing with their iPads.

Q9:

I .. I think it is going to stay it is going to be used more because it looks good there is a lot of potential to it but they really need to control how much exposure the kids have to the iPads, it needs to be controlled and it will be really effective they can take these home what do expect they are going to have games on it you know Instagram, facebook and everything so we shouldn't let them take them home.

Q10:

Ammm there is something we call aa flipping the classroom where instead of the teacher teaching you try to and teach where the students teach each other and then they actually use the iPad similar to the example I gave I was using the camera to show what I was doing so what then they have to do they have to use their iPads and record how they were disassembling a processor or removing a memory or removing a hard drive and they would record it because I don't have a time to go and look at everyone so they record what they did sent me the recording and I can sit and watch how yet he did right and he did wrong it was like a recorded footage of what they did also when they went home they can revise from the video they can hear me speaking in the background and they can see what we were doing so they physically didn't need to have to take the computer home they just need to see the video and remember everything of what they were doing so there are ways of … of utilizing an iPad but you really got to think about it

Q11:

I've been using quite a lot mmm Showbie is brilliant showbie allows you to be totally paperless amm I can get them home work instantly on the showbie and it doesn't matter where in the world they are even if they are absent they will receive the homework in their showbie I will know that they have not done it because they haven't posted their answers on the showbie other Apps I use is type on PDF you can give them any PDF sheet in the iPad and they can write on it and then send you back their answers we use a program called cohort and cohort .com it allows me to give them like a small puzzle type games where they solve in the puzzle but they also learning they choose sliding the words to the right picture ..etc other Apps concerning listening and speaking emm there is an audio recorder that we use oo it allows them to record audio and visual it allows you to manipulate the sound so they can change their voice so they still do the work but they can make the voice sounds different and makes it fun but gets the work done as well emm and keynotes is really good they all had lessons on how to use it. Keynotes is similar to powerpoint and with a lot extra more features you know they can use that to their benefits and I movie for visual and audio learning and all learning and I videos is brilliant they can go make their own movies edit it very quickly and give me a finish product very addictive

Interview 4:

Q1:

Aaa iPad as a teaching tool, it can be aa usful aa using different Apps it is able to have a quick access to the internet aa emm I think amm how do we use it in the classroom the aaa many students if they have the aaa em books downloaded into the iPad it is easy to aaa have a quicker access than just via the internet so it has more experiencing.

Q2:

Aaa I think a I think they ready so long as we have the right infrastructure I think it is an important thing about the iPad use is the aaa the need to have the right software and that stuff because iPad could be a tool and also can be a toy and so .. so long as we use appropriately right at that time we will be ready.

Q3:

Listening and speaking skills …aaa … I thing using the iPad aa …a so aa in classrooms as long as students have headphones then the iPad is they are able to listen to different texts like for multiple times a at the long pace as supposed to in classroom using listening exercises were we play MP3 over the entire a class sound system then you know if one person makes noise it can be a problem that the iPad use every one has to listen to it on their own with their own headphones aaa that is an improvements as far as speaking aa generally in my classes I do the speaking things where they are talking to each other and so they can be discussing whatever in the iPad.

Q4:

A em as far as in the classroom it is just has the managements of the queue sticks in the room it is able to control the queue sticks in the room when they have their own em you know listening you know ear pods.

Q5:

It is more often used as toy than a tool.

Q6:

Aaa do I mean it is I think it is just just aaa it depends on how it is used I think … there is so so many Apps and what not that figuring out the right ones and actually having the guidance or as a teacher it just takes a lot of time to figure out how tame the beast.

Q7:

I find iPads a…a .. a i mean with my students we start off having iPads since of the beginning of the year in tenth grade and then students they get mac books they just move on to the mac book and the iPad in the way I prefer the iPad but it is just hard to get them bring the iPad because the textbooks are faster with the iPad au but also there are a lot of websites are not designed for the iPads and so that is the obstacle there when you go for a certain thing and unless something is specifically designed for the iPad its head is going to fall apart and so you have people doing certain tasks do some internet searches and what not and it is slower in the iPads certain things and if it is actually specifically tailored for it then the iPad is so much better.

Q8:

aa…aaa.. my strategies for oral and listening skills a… are I mean I tend to a… I mean we have for using the iPad I mean they have to have the right you know it is a form of scaffolding for the students who are able to…. I mean I use the iPad so much just as tool to get information to them and so using listening skills I just find the iPad useful in theory with the listening skills because it is its they are more able to closely listen then to things you know in the classroom just trying to get everyone on page to make sure they have listened to the appropriate stuff the appropriate text a…a is rather difficult and so in theory the iPad you know make better use of the classrooms' audio space.

Q9:

Am.. aa. I Pad Apps that I use a… quizlet sometime I use padwet tends to make the work better I mean in Mac books they use the Cambridge text books in iPads a.. I have them keynotes presentations a…a I mean yea they have used the iPads as much as since they get the Mac Books they get the Mac Book a couple of months from the beginning of the school year so at the beginning of the school year we do all iPads but then you know boys with the new toys.

Q10:

Oh a… I think a. there needs to be a appropriate software in order to ensure that all students are on a..a on .. a on pace you know thing help in like ear pods, websites you know to make sure that get through a certain degree of curriculum and make sure they have learned it you know there are also other websites or .. or Apps where you once turn off the wifi you already get the attention of use what they use make sure you know to coral the students with the iPads because their connections to information so I think a… just having greater access of over side of what students can do in the classroom I think is important

Interview 5 and 6

Q1:F

I think personally it is an excellent tool but it depends on how you use it for example when we first get to use it in grade nine in ATHS we actually need to teach students how to use it first of all then how to use the Apps and things like that and the teachers as well need to know or taught exactly how to use it actually it is a very very useful tool but personally I think they should block iPads and use pens and papers because they are forgetting how to use them and the relay too much on the iPads specially in spelling.

Q1:M

I think it is a great tool as well for both teaching and learning …. It is more useful if it is used correctly I think from the teacher's side it is quiet easy it is quiet good to move but for students they can't access may far too much may something they do not need which end up may getting in the way of learning because it is there and they are working on it, it is quiet easy for them to work in the background for some games and then they do their work and then they switch to the games when you move so it is great but it needs to managed from people to limit what students need and what they can access on the iPads.

Q2:M

Ah we do have quiet the right may if I did bring them back but what we normally have in terms of texts we have texts that we have listening portion it is there in their iPads you just need to access that part and then you use it in the classroom we have got the KET trainer which is also on the iPads so they use that for the listening practice as well as other websites that can be used for students they are quiet useful for them

Q2:F

I pretty much the same we use for spelling the Apps for spelling I mean listening and speaking for listening and speaking we tend to go for ESL laps where we can download some exercises and use them they start from the beginners up to the advanced we either let them do it individually or as an all it is really help them a lot and it is very safe in access and even better

Q3F

For the meanwhile it is just listening properly because most of my student do not want to listen where they have to listen for the key words for the key vocabulary in the text as they should listen to and I also want them to be able to find out the questions and to read it to find out what exactly the key word is like what where when and one of the key words in the sentences they listen for that specifically … that skill needs to be trained how about speaking speaking again most of my classes would be a lot of speaking I don't … I can't speak Arabic and I can't translate for them but again they have to practice a lot of speaking they need to do a lot of… when we did the last projects and presentation works which really helped them boys who could not speak at the beginning of the project end up they can speak much better at the end now they may be can speak a very short paragraph in their presentations.

Q3:M

May be for speaking rather than listening , I use modeling for example if you have got like a speaker on aa… talking about a certain subject we tend to scaffold yea exactly then the students listen or hear out different words pronunciation we are looking at ….also at… the vocabulary they use within the text we sometimes use the TED or some situational speaking such as in the airport you actually get actors who are modeling what happened in the airport from arrival to getting tickets up to checking in and the language that they are using we picked up how to pronounce that words and then after that the speaker get to do their own one role plays to try to imitate any apply the practical part of this

Q4M

I think like I said initially it is a fantastic opportunity and … and aaa. It is good that they are available to be used with the students ….but I think we need just managing how it is used in the classroom and may be not relying completely on it because there are some skills really can't be properly assessed through the iPad writing for example is a great odd that needs most or all of our students to able to read and write the iPad doesn't really do the job in that case I know that there are some Apps where they can use the pen and write but it is not right for shaping letters or they can show that your writing is properly I think it still needs a book that they need to work on it.

Q4:F continue commenting from the last point of her colleague then they did have an exam in writing not in the iPad not at all in the iPad so..they get them to use the iPad all towards the end of the year then they give them the exam or quizzes in written … aaa there is a gap between instruction and assessment because some of my students they can't physically hold the pen anymore because they used to typing and swiping screen all the time following the screen but they can't actually hold a pen .. they can't write on a straight line that is from the start to the end right that is the problem exactly with the iPads.

## 8.4. Appendix D: Observation

**Phase: 2.1**

[L] Listening / [S] peaking / [B] Both

Time Span: 45 minutes

| Observed Activity | Apps and /or Strategy | Description | Reflection |
|---|---|---|---|
| Argumentative discourse. | - Edmodo<br>-Air sketch<br>-Dragon Dictation<br>-Speaking Pal | As this is the second phase of observation, there will be no description of the site as it has been described thoroughly in the previous orientation observations. The students are forming their seating based on the instruction they received from the teacher. ( and here mostly they form group work) The focus skill is listening the topic is "animal instinct" and "animal exploitation". Teacher explains to the students the expected learning outcomes of the whole unit as well as the specific topic. The main focus is to give the students chances to listen to an arguments between supporters and refuters of exploiting animals in scientific experiments. The main skill to be acquired is the ability to listen and identify the main ideas in counter-arguments and identify phrases to introduce counter arguments.<br><br>The teacher use "Edmodo" to communicate with the students and "Air Sketch" to demonstrate to the students the contents of the lesson which was an audio-visualized interview with two people in which they discuss exploiting animals in scientific experiments. The first App is used to send document whereas the second one is sued to demonstrate these documents by attaching the devices into one unit on the Apple T.V.<br><br>The given task was role play, where the teacher pairs the students and asks them to listen to the discussion and try to figure out the argumentation words or phrases.<br><br>After the task completed the students went on listing the argumentation words and phrases and the teacher went on approve or amend the selected words and ask the students to use them in meaningful sentences before they are used in the role play part<br><br>The last part of the lesson is when the students make use of the given argumentation words and use them in their own discussion. | This is the second phase as the first phases are not transcribed as they are only mentioned on the methodology chapter that they are only for orientating the researcher with the context of the study and the classroom seating which is demonstrated in the figure in the same chapter.<br><br>As for the lesson plan it was detailed and the skill that is intended to be taught is clear and the objectives are there.<br>As per the technology integration the teacher managed to infuse two Apps I which he uses one of them as a class room virtual learning environments. In this activity we can see a lot of different kinds of interactions among students themselves students-teachers by following the instructions teachers-students by giving these instructions as well as teacher-device and students-device which is in accord with the theoretical framework of the thesis.<br>The given activities incite the interaction in its all kinds which means that it is a strategy by itself once teachers create these activities. However, it can be implemented without iPad if the discussion is shown only by using simple technology such as data show projector. The plus for the iPad here is the virtual learning environment that may extend the learning till later time (ubiquity)<br><br>As the task was role play that means it combines the two skills as the students are going to listen first then they are going to extract which means they are applying the higher orders of thinking skills according to Bloom's Taxonomy this augmented in the application of the extracted argumentation where students exploit them in their role play. The ultimate goal is that learning is happening and the students are engaged which is not the case if this activity applied only by the normal technology integration. Furthermore, students themselves were using some Apps to check the pronunciation of the words like "Dragon Dictation" which means that the app itself might be the strategy. Another group was using "Speaking Pal" |

| | | | |
|---|---|---|---|
| | | | |
| Quantitative Analysis | | | |
| [I] | The activity can be completed without the iPad; however, the iPad makes the learners more engaged and helps in developing their oral and listening skills as they are checking their pronunciation before they use the word which is not possible without the feasible mobility of this device. | | |
| [S (1-5m)] | | | |
| [S_S (INT)] | | | |
| [S_T (INT)] | | | |
| [S_I (INT)] | | | |
| [R(1-5)] | | | |
| [A(1-5)] | | | |
| [IP(1-5)] | | | |
| [F(1-5)] | | | |

Observation keys

| Description: | Reflection |
|---|---|
| [I]- If the activity can be better completed using iPad | [R(1-5)] the level of performance |
| [W]- If the activity can be completed without the iPad | [F(1-5)] the level of fluency |
| [S (1-5m)]- Time spent on the activity | [A(1-5)] the level of accuracy |
| [S_S (INT)]- Student-student interaction | [IP(1-5)] the level of iPad use |
| [S_T (INT)]- Student-teacher interaction | |
| [S_I (INT)]- Student-iPad interaction | |

Reflection (1)= lowest to (5)=highest

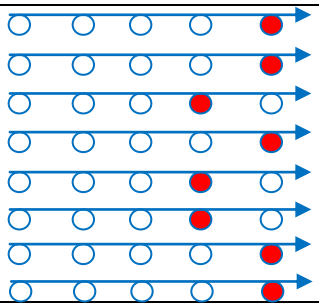
**Phase: 2.2**

[L] Listening / [S] peaking / [B] Both

Time Span: 45 minutes

| Observed Activity | Apps and /or Strategy | Description | Reflection |
|---|---|---|---|
| Making a phone call. | - Edmodo<br>- ShowMe<br>- iFun Face<br>-Speaking Pal<br>-PuppetPals<br>-Toontastic | This lesson is basically about making a phone call and the language functions that are needed for making these calls. The main objectives of this lesson according to the instructional document is as follows:<br>• Use discourse markers to verify information, request restatement or clarification, and to interrupt<br>•Can identify discourse markers to verify information used for advertisements, telephone messages, different tours and TV news reports<br>As for the speaking, they are as follows:<br>•Can elaborate on and justify answers<br>•Can use terms and phrases in turn taking or interruption<br>The focused activity is imitating the authentic phone call. Teacher warms the students up by grouping them and asks every group to design their own task which is here a fake phone call with different purposes but he instructed them to vary the purposes. Variety of the tasks were generated the main topics talked are:<br>•Asking about a certain person.<br>•Making commercial announcement.<br>•Having an appointment.<br>•Cancelling a meeting.<br>Here is the script of one of the phone calls.<br>A Wrong Number<br><br>Salim: Hello!<br><br>Ali: Hello.<br><br>Salim: Can I speak to Khalid?<br><br>Ali: Ummmm, who is this?<br><br>Salim: It's me Salim. Are you his brother?<br><br>Ali: No, Salim. I think you have dialed the wrong number.<br><br>Salim: Oh! I am sorry.<br><br>Ali: No problem! | Here the activity is different as the students are asked to generate their own dialogue. It is a successful strategy once the teacher groups the students and ask them to work to gather wither virtually while they are outside the classroom to this end he used the Edmodo grouping feature to keep track on them and to monitor their working time virtually and the level of contribution of each one. It is deemed beneficial strategy to engage learners to support each other and to enable the teaching environment to be extendable and ubiquitous.<br>While watching the learners' collaboration and progress the frame in mind was the Kools intersections of interactions and the interaction mode. The reason for maintaining the framework for the analysis is that it signals the real evaluation of M-learning implementation.<br>Most if not all teachers presumably opt to integrate the two skills to gather while teaching which is valid as they are interdependable skills so in this case teaching one skill is sought conducive to the other.<br>Giving the students the freedom to adopt the suitable apps that can serve their objective is another strategy which is varied according to the negotiated type of apps by the whole group and agreed on the best one. This by itself might be considered a strategy which might lead to a final product that is feasible therefore other students might adopt this final product.<br>Applying the PPP approach using the iPad is another strategy the emergence of this new strategy from the old one is a merit for using the iPad in teaching and learning. It is evident that the learners went through the three phases of presentation (here it is about the dialogue which is designed using the iPads) the practice (the use of these skills by other learners and finally the production (the final version of the app's production of the dialogue) which is encouraged by the teacher to disseminate to other groups.<br>The different uses of different apps indicate the development of the higher thinking orders to the level of application and synthesis which approve that iPad has enhanced the levels of Bloom's Taxonomy implementation even if it is unintentional.<br>Assimilating the authenticity if the daily natural conversation is again one of the principles of the social constructivism which is the framework of this study. Thus applying these iPad apps in their authentic situations will lead to smooth acquisition |

| | | | |
|---|---|---|---|
| | | | of the intended skills which are listening and speaking |

| Quantitative Analysis | | |
|---|---|---|
| [I] | The activity can be completed without the iPad; however, the mobile device adds the value of ubiquity as well as the knowledge accessibility which allow for mastery. Moreover, it builds the learners self confidence once they are aware of the actual pronunciation and the actual context of the functional language in use. They will use these apps to look for samples on how to or what to use these language functions and use them properly in their lives. Doing that they will assimilate them and in the other hand develop their higher orders of thinking. | |
| [S (1-5m)] |  | excessive time was spent on the activity |
| [S_S (INT)] | | excellent interaction among students |
| [S_T (INT)] | | Fair not enough interaction between teacher and students |
| [S_I (INT)] | | Full interaction between students and iPads |
| [R(1-5)] | | High level of performance is noticed |
| [A(1-5)] | | High level of accuracy is noticed |
| [IP(1-5)] | | Full iPad use |
| [F(1-5)] | | Perfect level of fluency |

Observation keys

| Description: | Reflection |
|---|---|
| [I]- If the activity can be better completed using iPad | [R(1-5)] the level of performance |
| [W]- If the activity can be completed without the iPad | [F(1-5)] the level of fluency |
| [S (1-5m)]- Time spent on the activity | [A(1-5)] the level of accuracy |
| [S_S (INT)]- Student-student interaction | [IP(1-5)] the level of iPad use |
| [S_T (INT)]- Student-teacher interaction | |
| [S_I (INT)]- Student-iPad interaction | |

Reflection (1)= lowest to (5)=highest

## 8.5. Appendix E: Consent Form

**Study Title:** Evaluating the Effectiveness of IPad as an M-learning Device on Developing STS Students' English Oral and Listening Skills Based on Koole's Social Constructivist Model

**Performance Site:** UAE's Secondary Technical Schools

**Researcher:** The following investigator is available for questions about this study,

Mahes AlOlaimat phone: 0505968221 email: 120018@student.buid.ac.ae

**Purpose of the Study:** Exploring the phenomenon of iPad as an M-learning device in enhancing students' oral and listening skills in Secondary Technical Schools is a pivotal issue for three reasons. First, it will give insight into the role of M-learning in enhancing instruction and language attainment. Secondly, it will enrich the body of both national and international literature by bridging the gaps on how to approach M-learning in vocational education. Lastly, it will provide a portrayal image of the strategies of teaching and learning in the digital age.

**Subject Inclusion:** Eleventh Grader at Secondary Technical Schools ADVETI

**Study Procedures:** students will be asked to participate in questionnaire that will focus on their readiness, current use and perception of using mobile devices for learning.

**Benefits:** Subjects will not receive any monetary benefits from this study.

**Risks:** This study does not present any risks for participants.

**Right to Refuse:** Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefits to which they might otherwise be entitled.

**Privacy:** Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

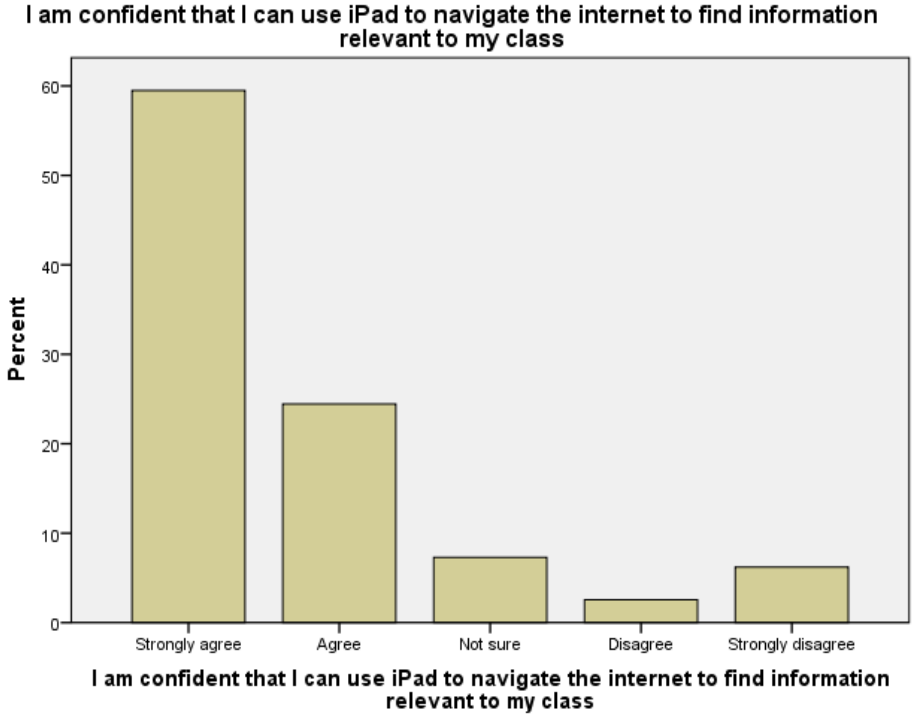
**Signature:** The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifications to the investigator. If I have questions about subjects' rights or other concerns, I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

_____

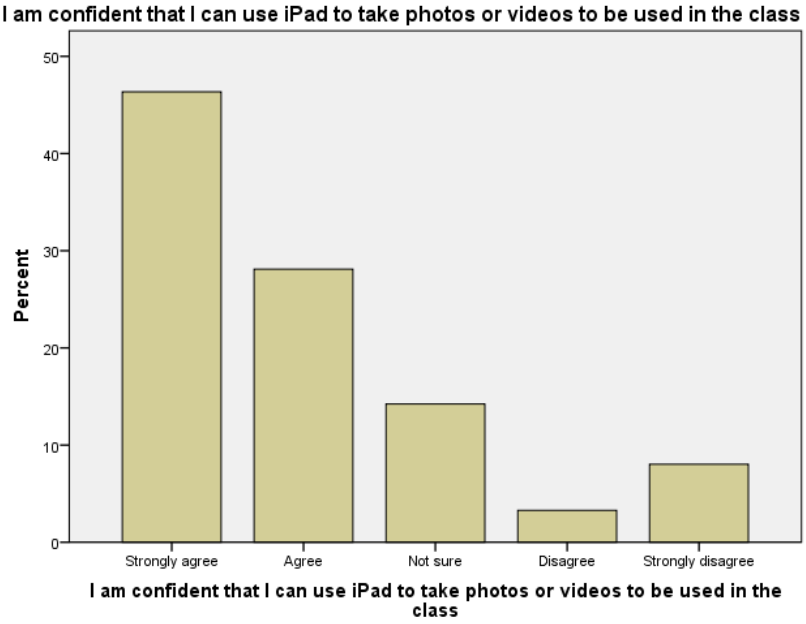
Signature of Subject Date

## 8.6. Appendix F: Descriptive Analysis Results

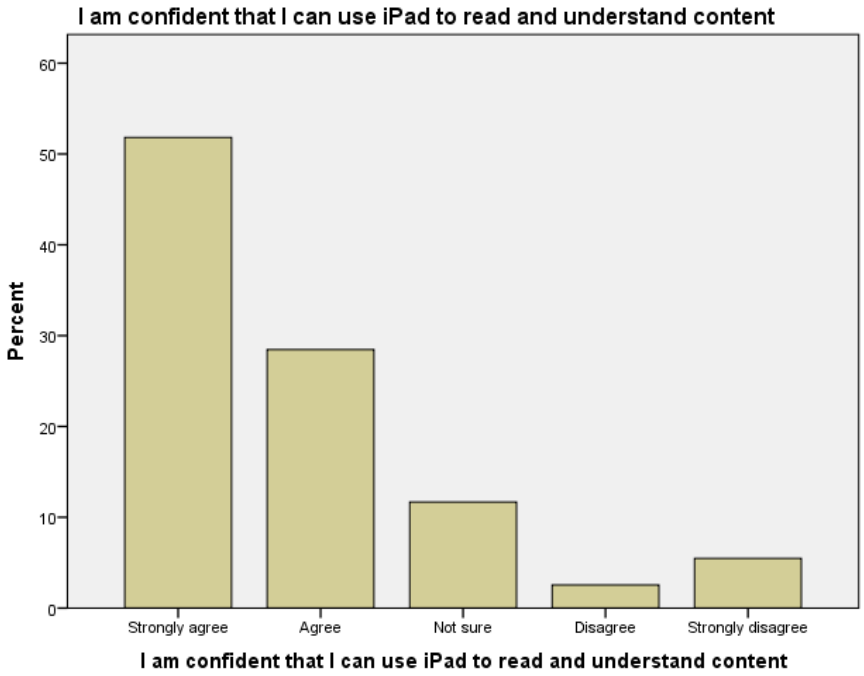
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 163 | 59.5 | 59.5 | 59.5 |
| | Agree | 67 | 24.5 | 24.5 | 83.9 |
| | Not sure | 20 | 7.3 | 7.3 | 91.2 |
| | Disagree | 7 | 2.6 | 2.6 | 93.8 |
| | Strongly disagree | 17 | 6.2 | 6.2 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 127 | 46.4 | 46.4 | 46.4 |
| | Agree | 77 | 28.1 | 28.1 | 74.5 |
| | Not sure | 39 | 14.2 | 14.2 | 88.7 |
| | Disagree | 9 | 3.3 | 3.3 | 92.0 |
| | Strongly disagree | 22 | 8.0 | 8.0 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

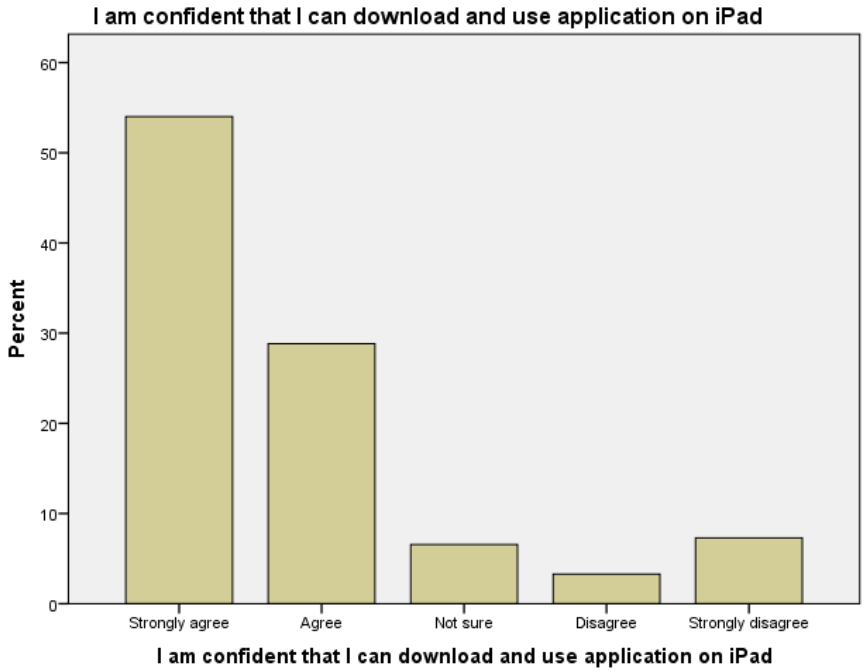


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 142 | 51.8 | 51.8 | 51.8 |
| | Agree | 78 | 28.5 | 28.5 | 80.3 |
| | Not sure | 32 | 11.7 | 11.7 | 92.0 |
| | Disagree | 7 | 2.6 | 2.6 | 94.5 |
| | Strongly disagree | 15 | 5.5 | 5.5 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



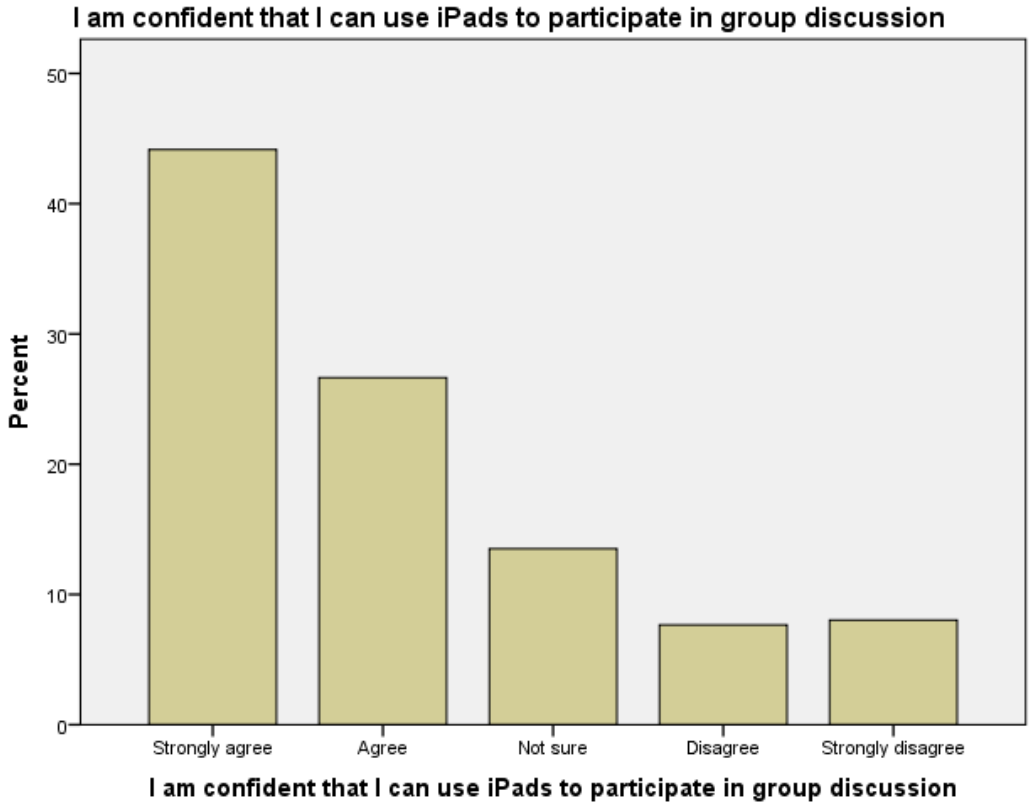
**I am confident that I can download and use application on iPad**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 148 | 54.0 | 54.0 | 54.0 |
| | Agree | 79 | 28.8 | 28.8 | 82.8 |
| | Not sure | 18 | 6.6 | 6.6 | 89.4 |
| | Disagree | 9 | 3.3 | 3.3 | 92.7 |
| | Strongly disagree | 20 | 7.3 | 7.3 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



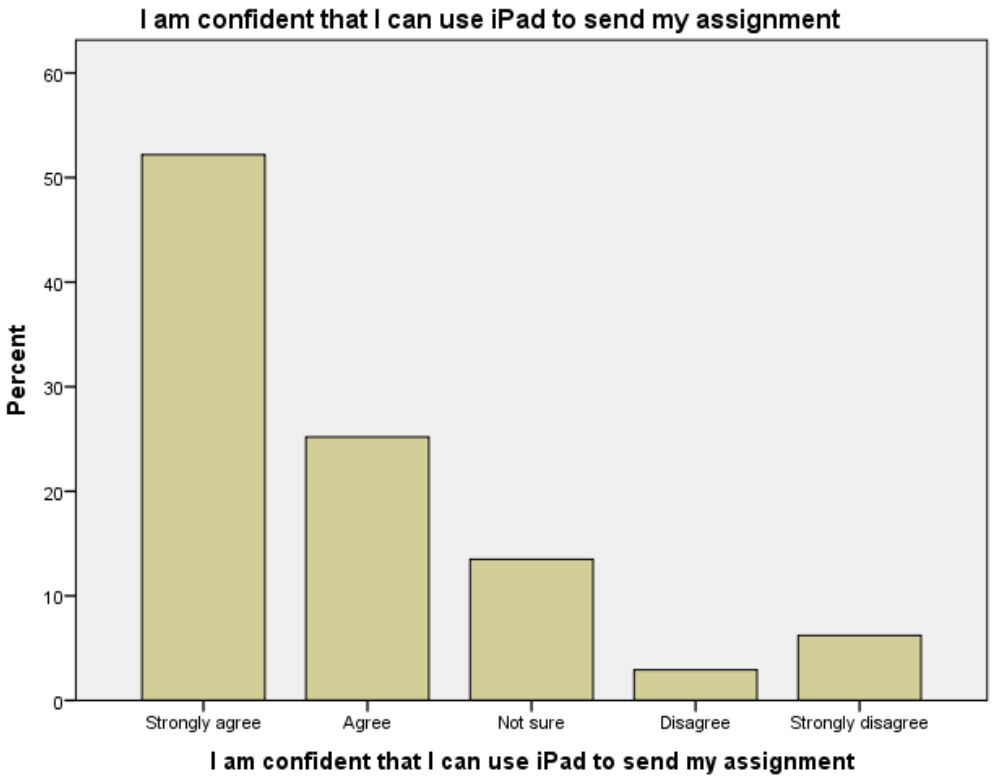
**I am confident that I can use iPads to participate in group discussion**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 121 | 44.2 | 44.2 | 44.2 |
| | Agree | 73 | 26.6 | 26.6 | 70.8 |
| | Not sure | 37 | 13.5 | 13.5 | 84.3 |
| | Disagree | 21 | 7.7 | 7.7 | 92.0 |
| | Strongly disagree | 22 | 8.0 | 8.0 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



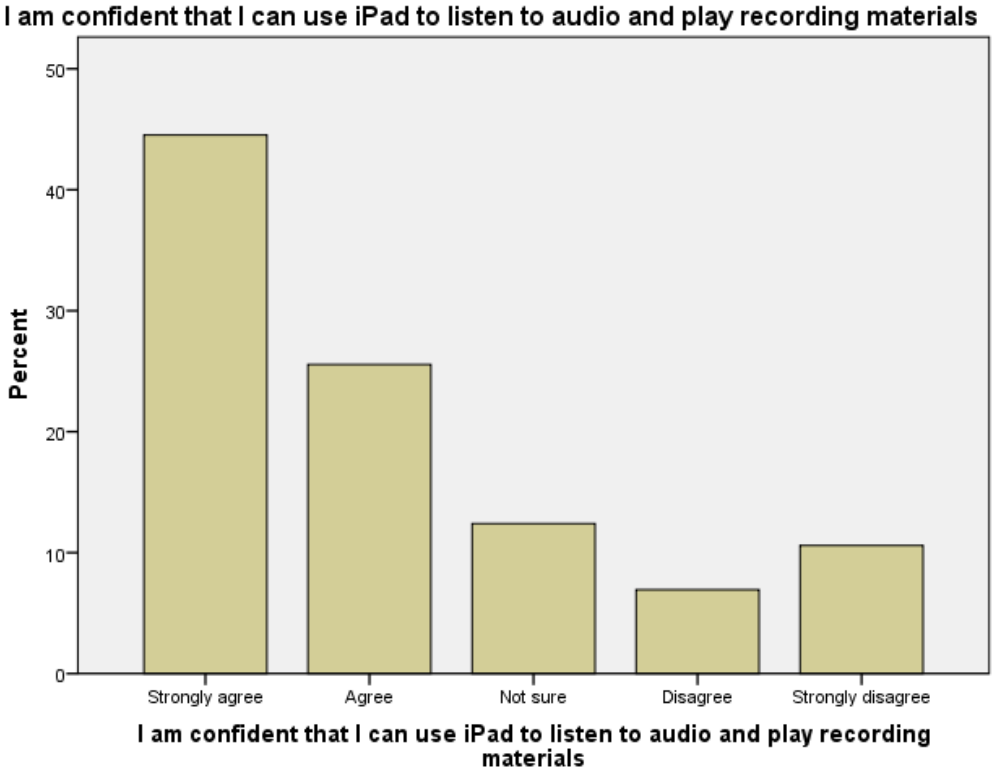
**I am confident that I can use iPad to send my assignment**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 143 | 52.2 | 52.2 | 52.2 |
| | Agree | 69 | 25.2 | 25.2 | 77.4 |
| | Not sure | 37 | 13.5 | 13.5 | 90.9 |
| | Disagree | 8 | 2.9 | 2.9 | 93.8 |
| | Strongly disagree | 17 | 6.2 | 6.2 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



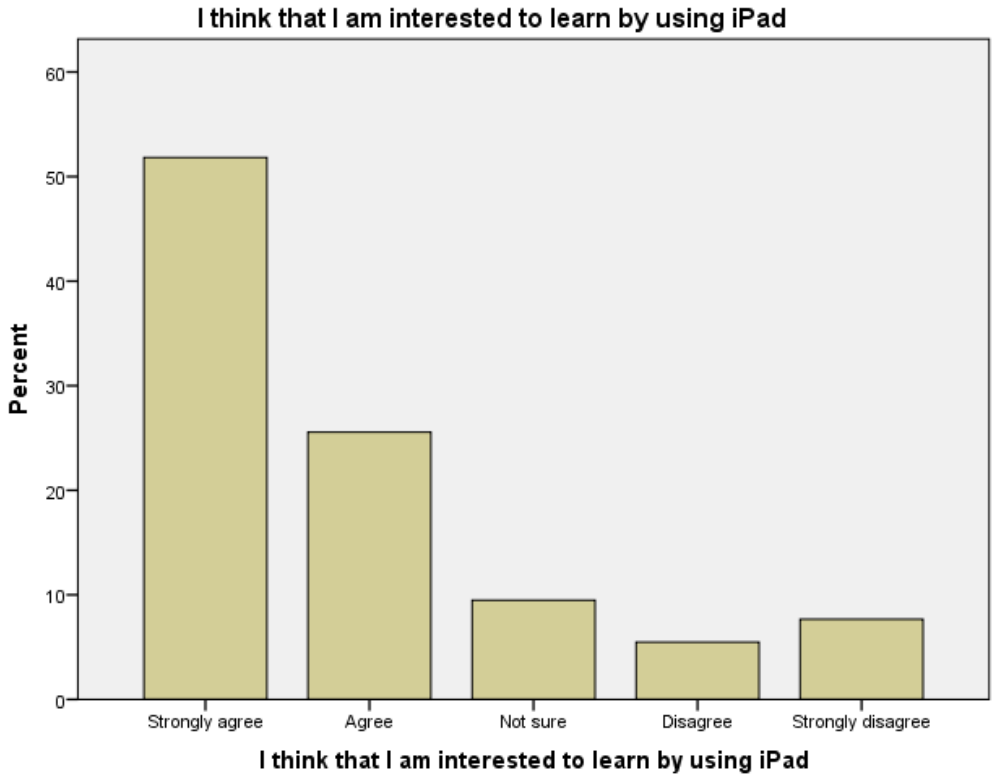
**I am confident that I can use iPad to listen to audio and play recording materials**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 122 | 44.5 | 44.5 | 44.5 |
| | Agree | 70 | 25.5 | 25.5 | 70.1 |
| | Not sure | 34 | 12.4 | 12.4 | 82.5 |
| | Disagree | 19 | 6.9 | 6.9 | 89.4 |
| | Strongly disagree | 29 | 10.6 | 10.6 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

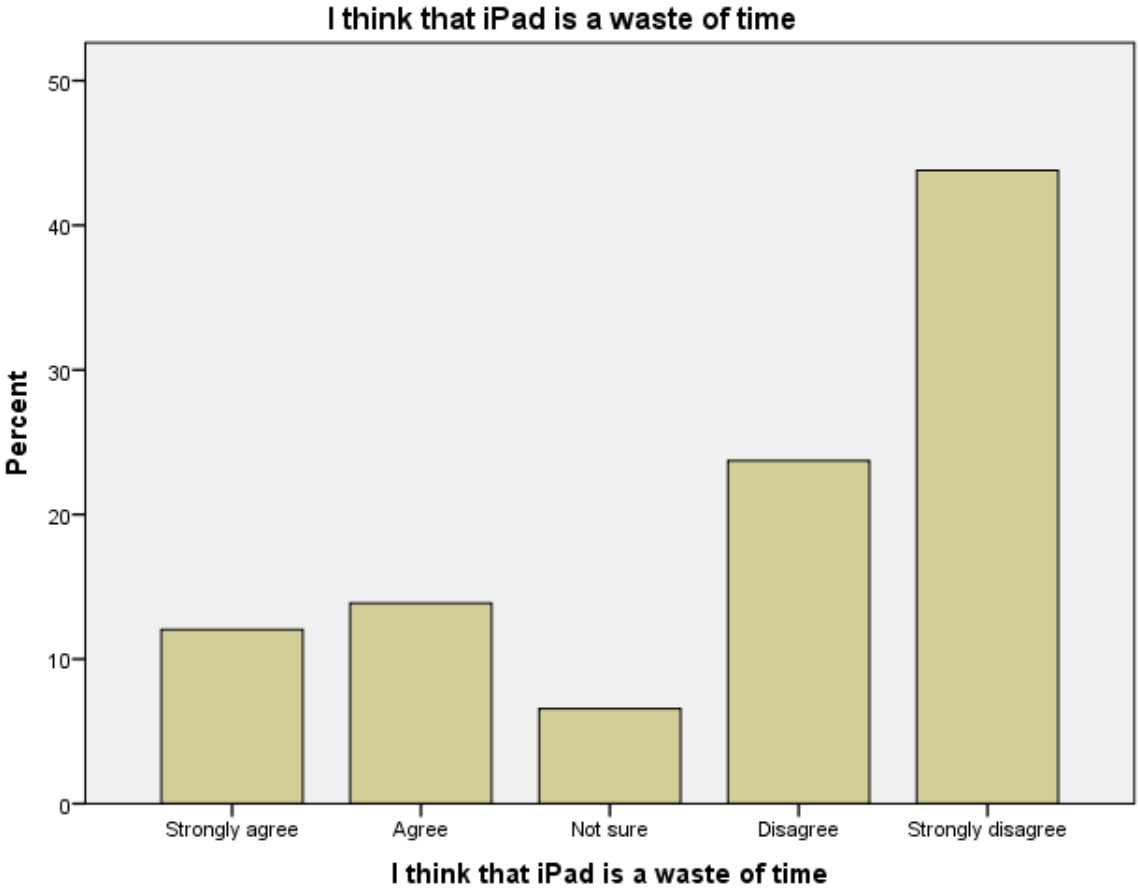


**I think that I am interested to learn by using iPad**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 142 | 51.8 | 51.8 | 51.8 |
| | Agree | 70 | 25.5 | 25.5 | 77.4 |
| | Not sure | 26 | 9.5 | 9.5 | 86.9 |
| | Disagree | 15 | 5.5 | 5.5 | 92.3 |
| | Strongly disagree | 21 | 7.7 | 7.7 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

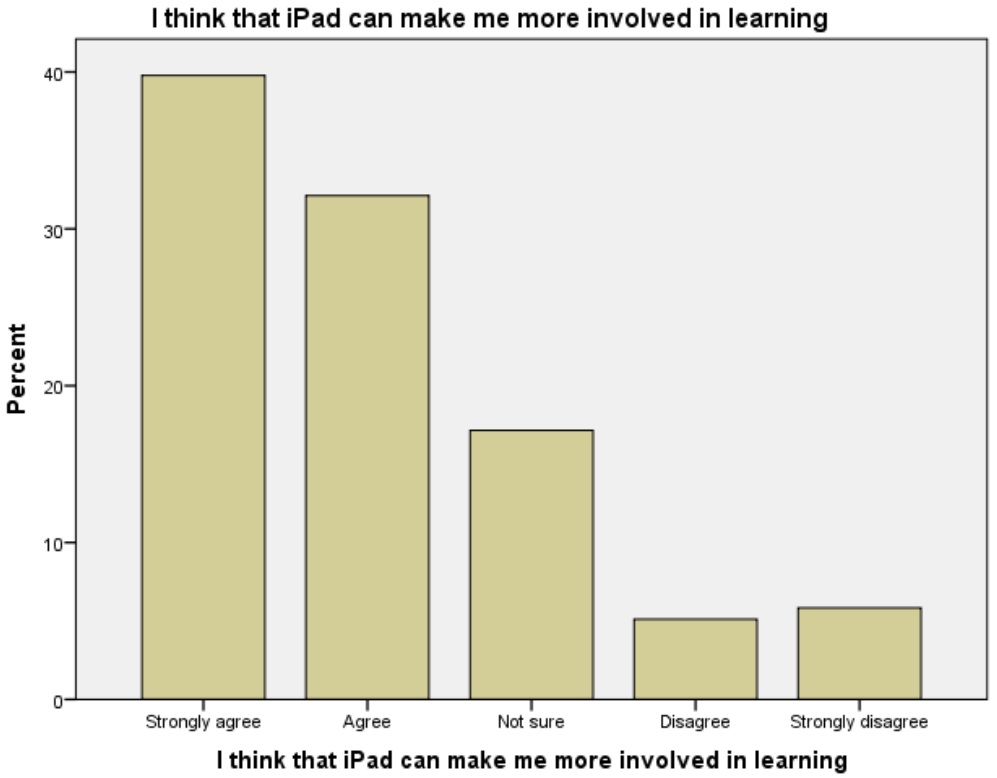


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 33 | 12.0 | 12.0 | 12.0 |
| | Agree | 38 | 13.9 | 13.9 | 25.9 |
| | Not sure | 18 | 6.6 | 6.6 | 32.5 |
| | Disagree | 65 | 23.7 | 23.7 | 56.2 |
| | Strongly disagree | 120 | 43.8 | 43.8 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



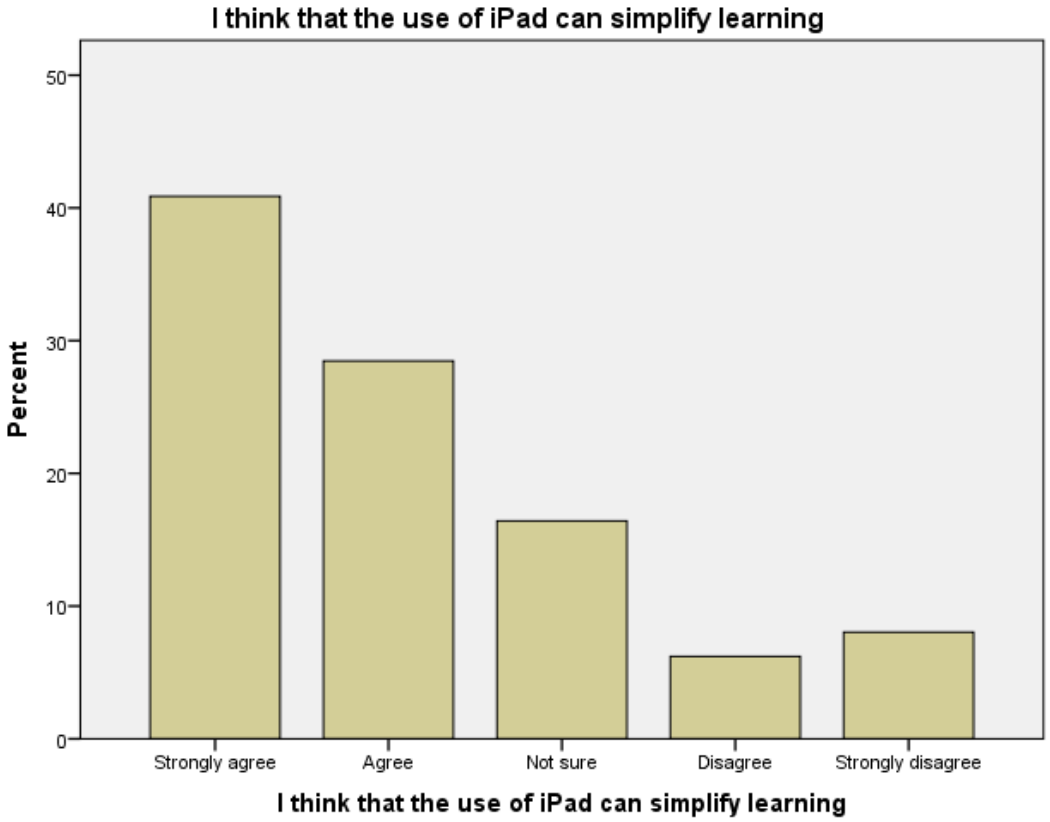
**I think that iPad can make me more involved in learning**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 109 | 39.8 | 39.8 | 39.8 |
| | Agree | 88 | 32.1 | 32.1 | 71.9 |
| | Not sure | 47 | 17.2 | 17.2 | 89.1 |
| | Disagree | 14 | 5.1 | 5.1 | 94.2 |
| | Strongly disagree | 16 | 5.8 | 5.8 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



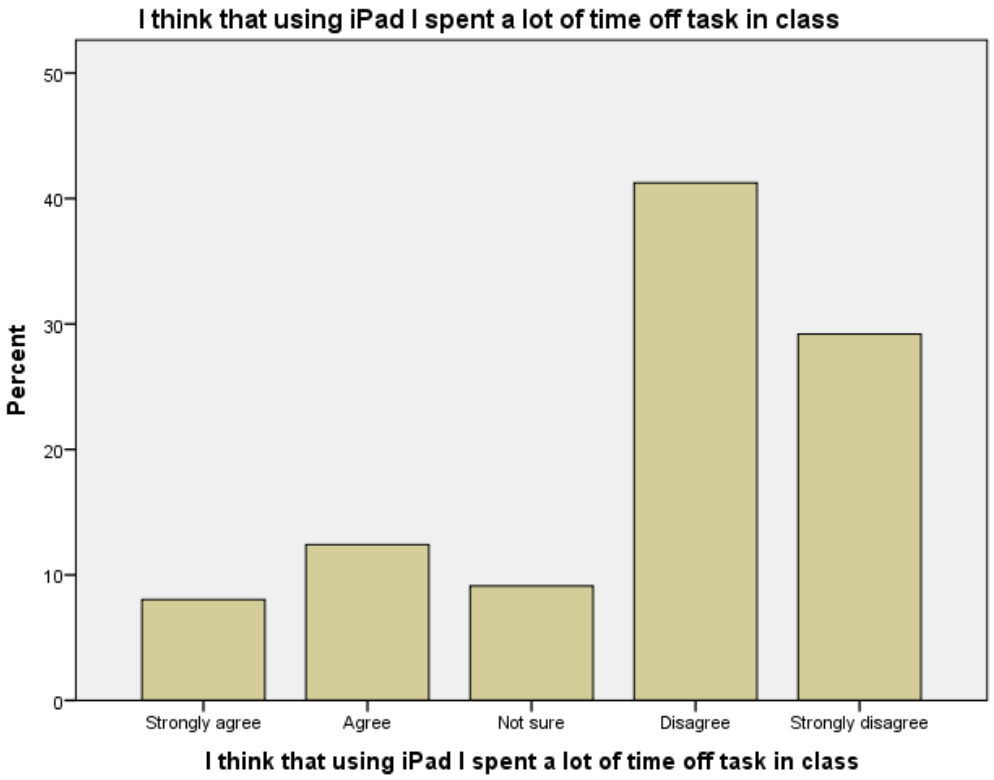
**I think that the use of iPad can simplify learning**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 112 | 40.9 | 40.9 | 40.9 |
| | Agree | 78 | 28.5 | 28.5 | 69.3 |
| | Not sure | 45 | 16.4 | 16.4 | 85.8 |
| | Disagree | 17 | 6.2 | 6.2 | 92.0 |
| | Strongly disagree | 22 | 8.0 | 8.0 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



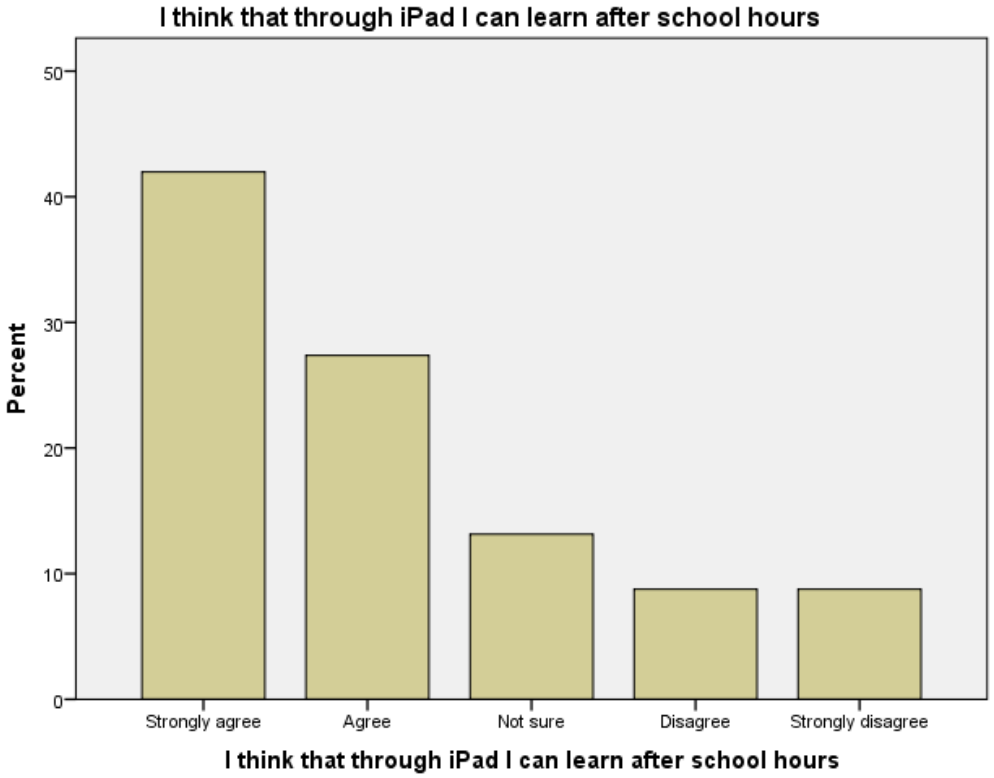
**I think that using iPad I spent a lot of time off task in class**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 22 | 8.0 | 8.0 | 8.0 |
| | Agree | 34 | 12.4 | 12.4 | 20.4 |
| | Not sure | 25 | 9.1 | 9.1 | 29.6 |
| | Disagree | 113 | 41.2 | 41.2 | 70.8 |
| | Strongly disagree | 80 | 29.2 | 29.2 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



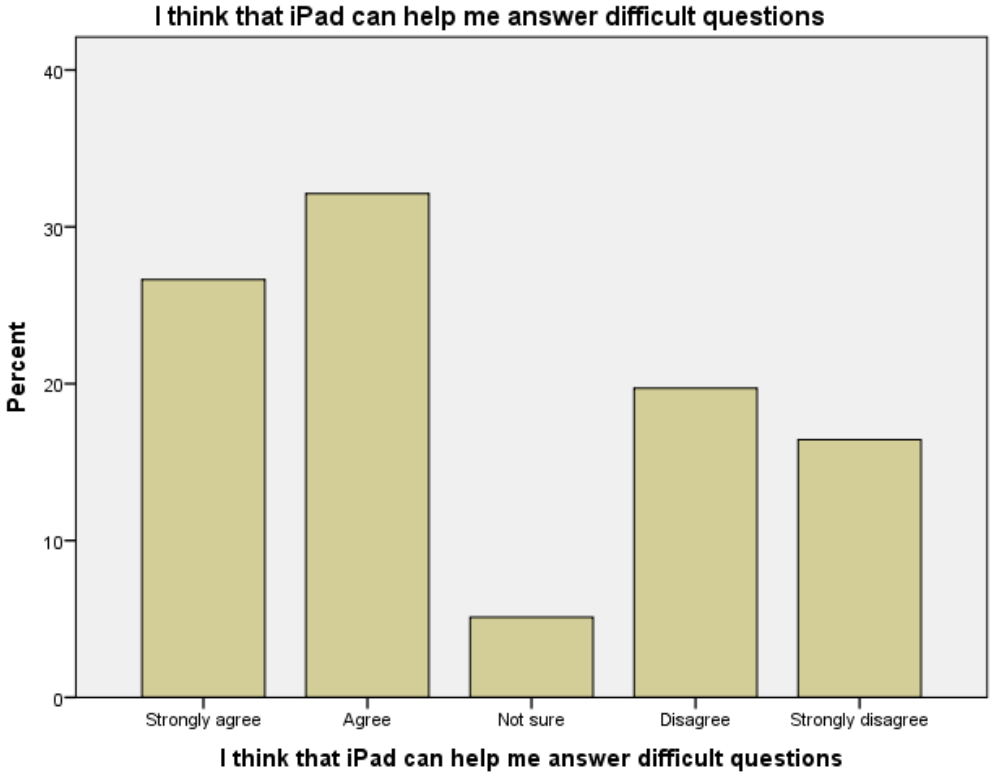
**I think that through iPad I can learn after school hours**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 115 | 42.0 | 42.0 | 42.0 |
| | Agree | 75 | 27.4 | 27.4 | 69.3 |
| | Not sure | 36 | 13.1 | 13.1 | 82.5 |
| | Disagree | 24 | 8.8 | 8.8 | 91.2 |
| | Strongly disagree | 24 | 8.8 | 8.8 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

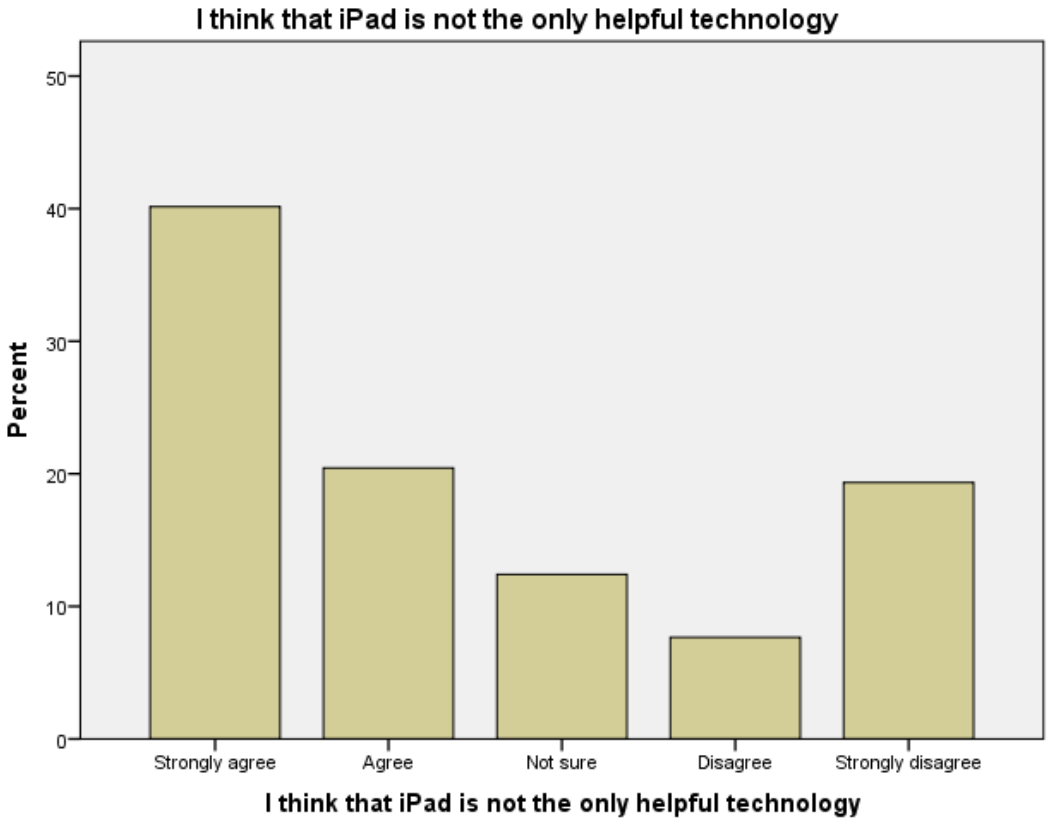


**I think that iPad can help me answer difficult questions**

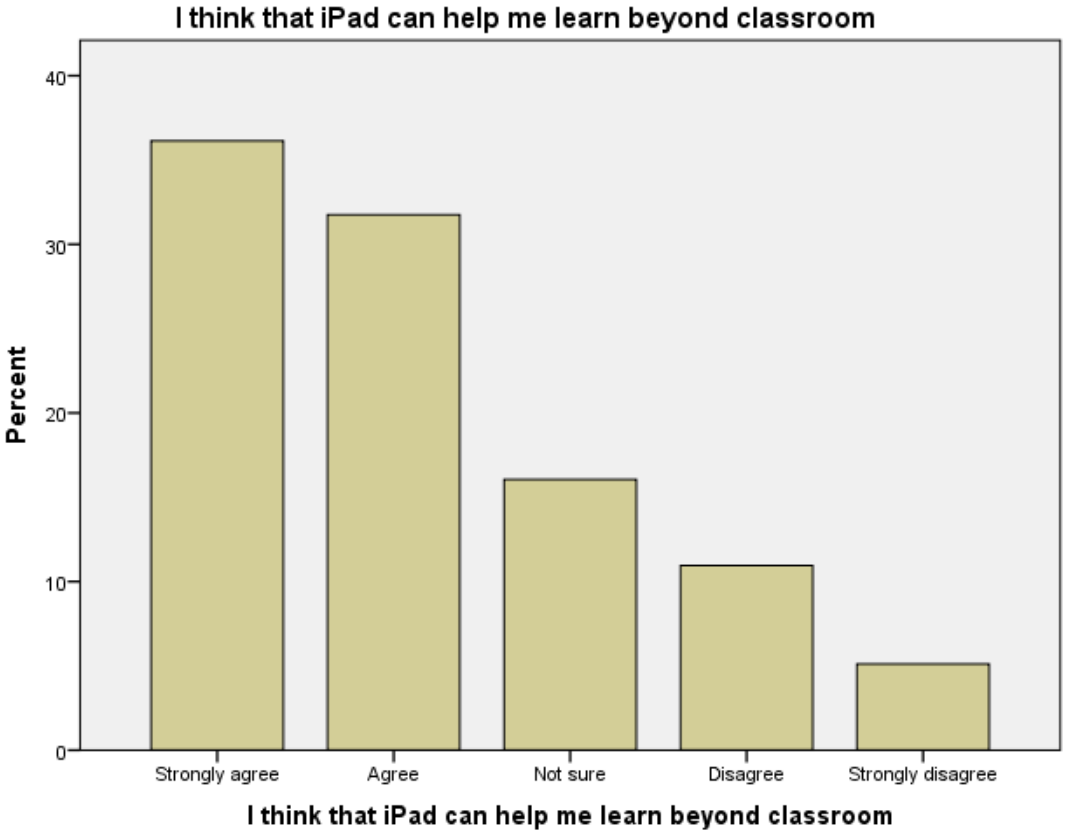
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 73 | 26.6 | 26.6 | 26.6 |
| | Agree | 88 | 32.1 | 32.1 | 58.8 |
| | Not sure | 14 | 5.1 | 5.1 | 63.9 |
| | Disagree | 54 | 19.7 | 19.7 | 83.6 |
| | Strongly disagree | 45 | 16.4 | 16.4 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



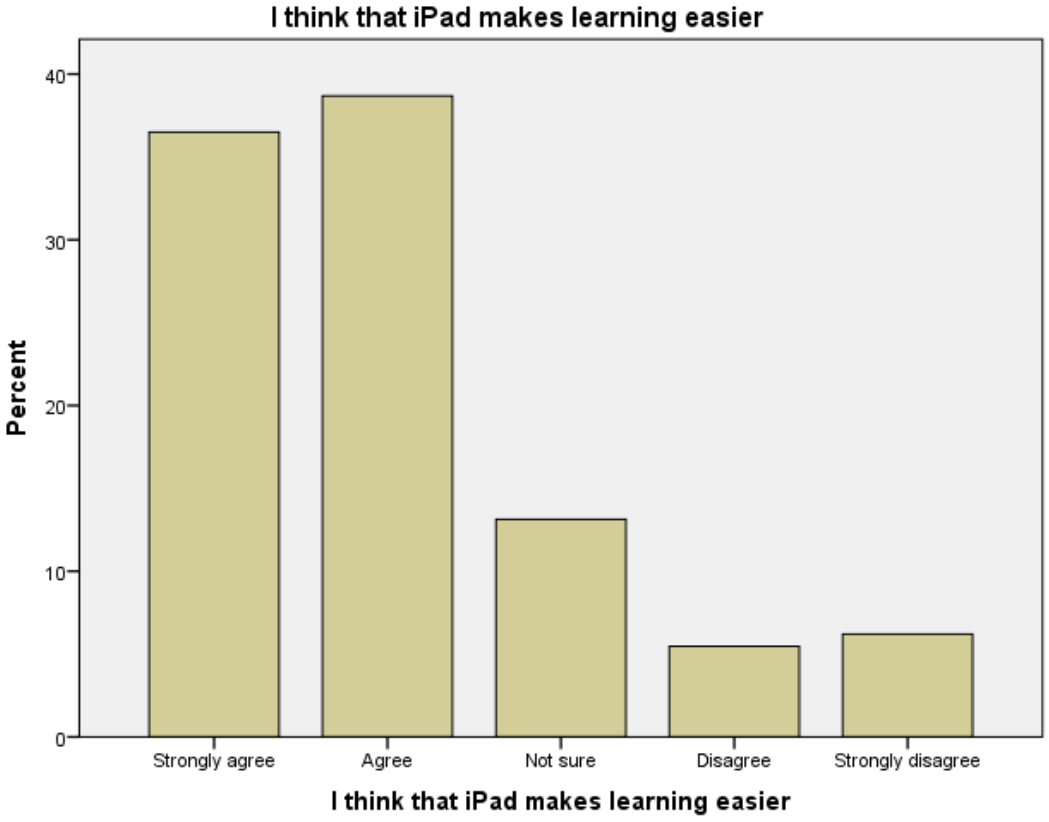
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 110 | 40.1 | 40.1 | 40.1 |
| | Agree | 56 | 20.4 | 20.4 | 60.6 |
| | Not sure | 34 | 12.4 | 12.4 | 73.0 |
| | Disagree | 21 | 7.7 | 7.7 | 80.7 |
| | Strongly disagree | 53 | 19.3 | 19.3 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 99 | 36.1 | 36.1 | 36.1 |
| | Agree | 87 | 31.8 | 31.8 | 67.9 |
| | Not sure | 44 | 16.1 | 16.1 | 83.9 |
| | Disagree | 30 | 10.9 | 10.9 | 94.9 |
| | Strongly disagree | 14 | 5.1 | 5.1 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

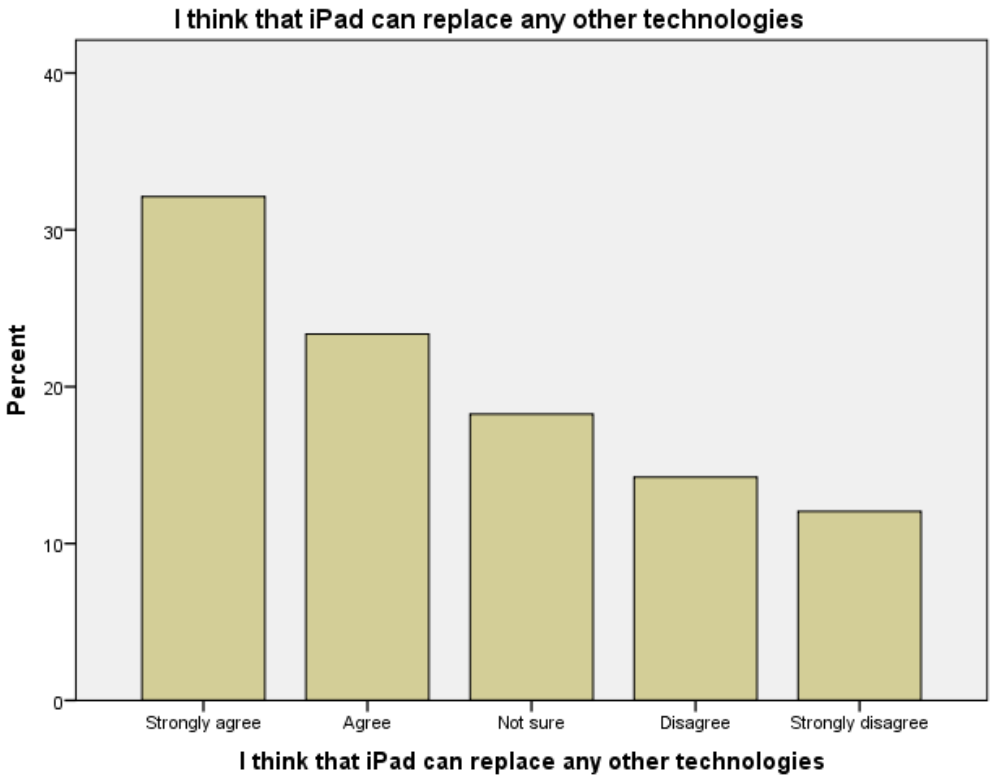


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 100 | 36.5 | 36.5 | 36.5 |
| | Agree | 106 | 38.7 | 38.7 | 75.2 |
| | Not sure | 36 | 13.1 | 13.1 | 88.3 |
| | Disagree | 15 | 5.5 | 5.5 | 93.8 |
| | Strongly disagree | 17 | 6.2 | 6.2 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

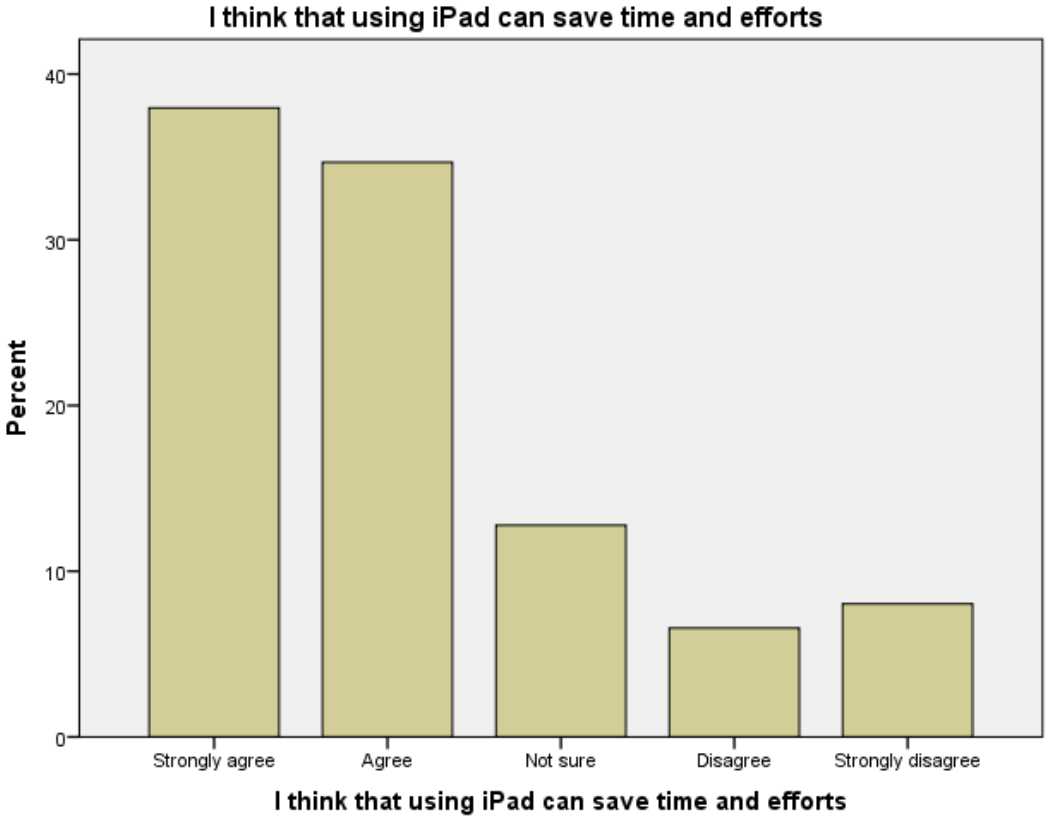


**I think that iPad can replace any other technologies**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 88 | 32.1 | 32.1 | 32.1 |
| | Agree | 64 | 23.4 | 23.4 | 55.5 |
| | Not sure | 50 | 18.2 | 18.2 | 73.7 |
| | Disagree | 39 | 14.2 | 14.2 | 88.0 |
| | Strongly disagree | 33 | 12.0 | 12.0 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

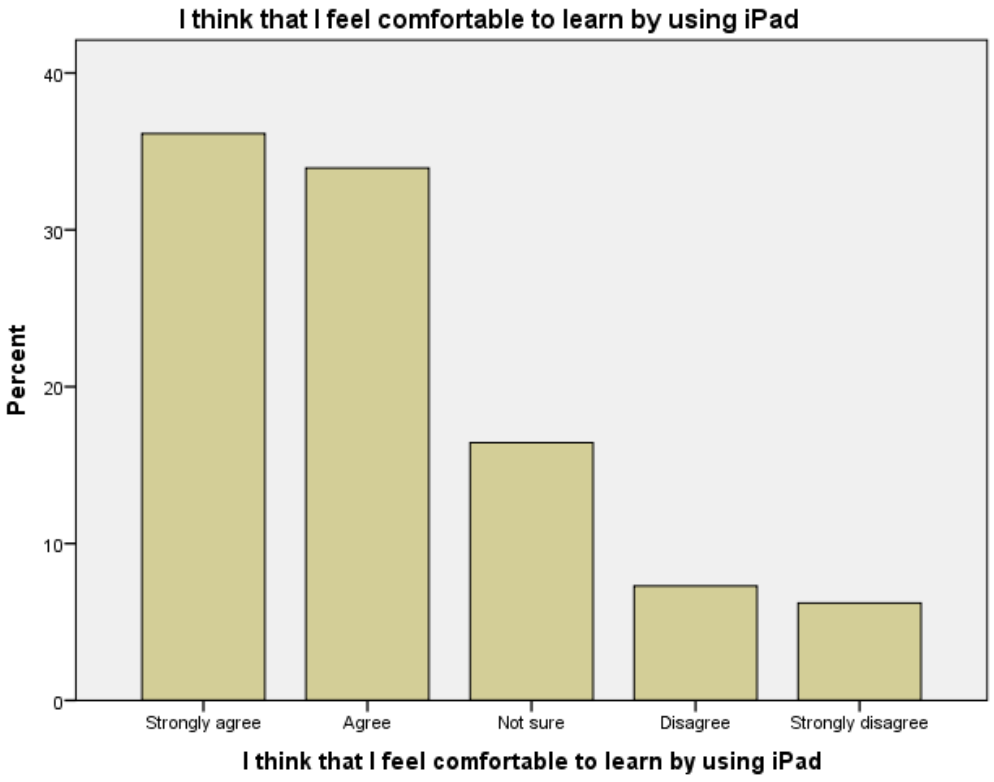


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 104 | 38.0 | 38.0 | 38.0 |
| | Agree | 95 | 34.7 | 34.7 | 72.6 |
| | Not sure | 35 | 12.8 | 12.8 | 85.4 |
| | Disagree | 18 | 6.6 | 6.6 | 92.0 |
| | Strongly disagree | 22 | 8.0 | 8.0 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

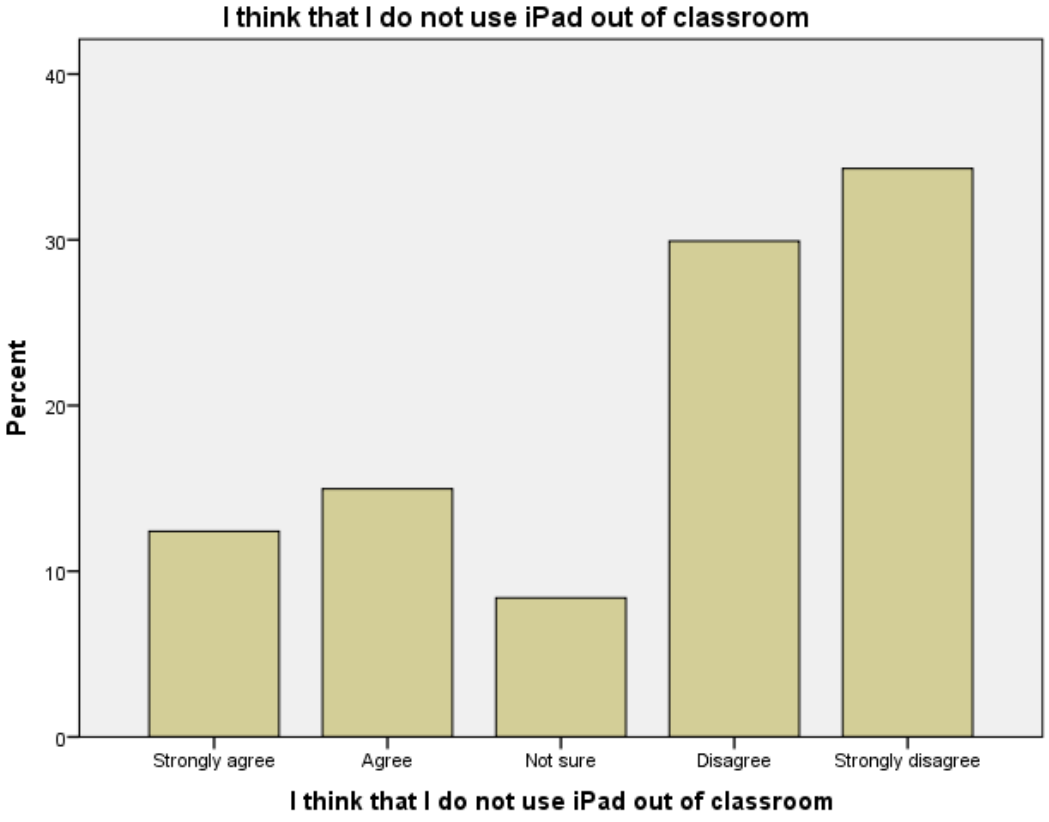


**I think that I feel comfortable to learn by using iPad**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 99 | 36.1 | 36.1 | 36.1 |
| | Agree | 93 | 33.9 | 33.9 | 70.1 |
| | Not sure | 45 | 16.4 | 16.4 | 86.5 |
| | Disagree | 20 | 7.3 | 7.3 | 93.8 |
| | Strongly disagree | 17 | 6.2 | 6.2 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

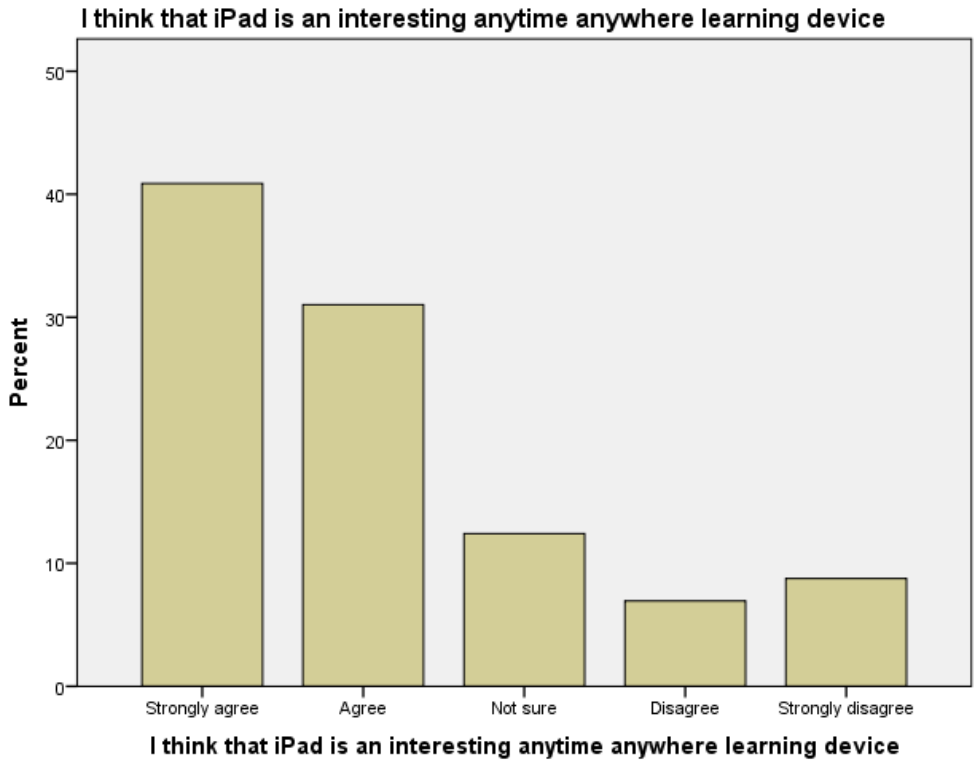


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 34 | 12.4 | 12.4 | 12.4 |
| | Agree | 41 | 15.0 | 15.0 | 27.4 |
| | Not sure | 23 | 8.4 | 8.4 | 35.8 |
| | Disagree | 82 | 29.9 | 29.9 | 65.7 |
| | Strongly disagree | 94 | 34.3 | 34.3 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

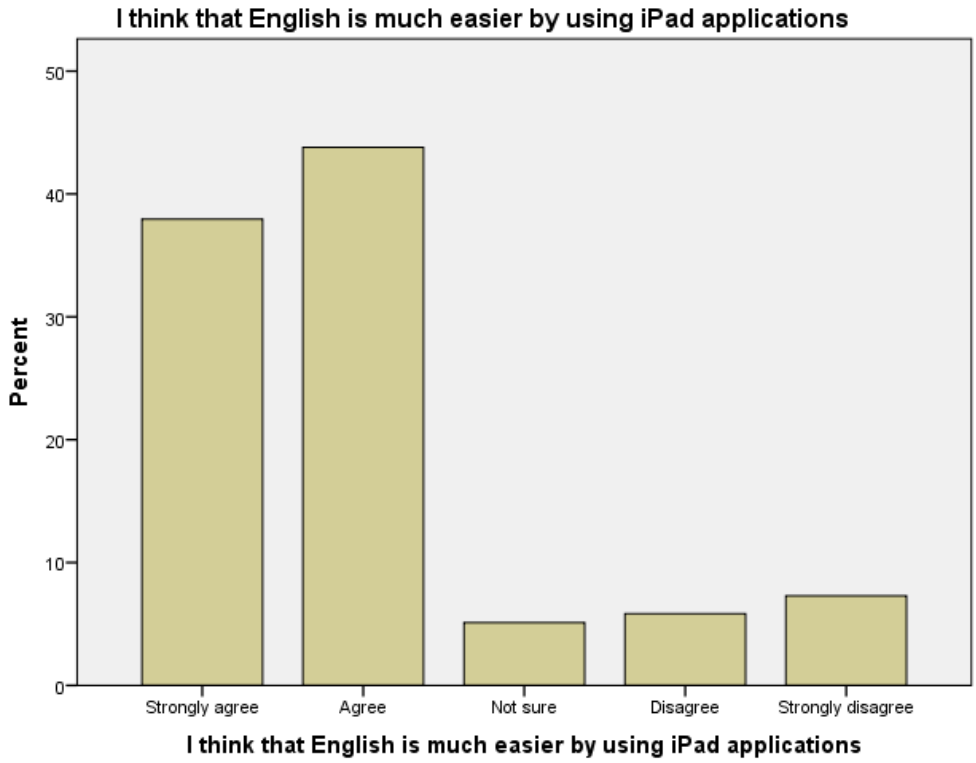


**I think that iPad is an interesting anytime anywhere learning device**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 112 | 40.9 | 40.9 | 40.9 |
| | Agree | 85 | 31.0 | 31.0 | 71.9 |
| | Not sure | 34 | 12.4 | 12.4 | 84.3 |
| | Disagree | 19 | 6.9 | 6.9 | 91.2 |
| | Strongly disagree | 24 | 8.8 | 8.8 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

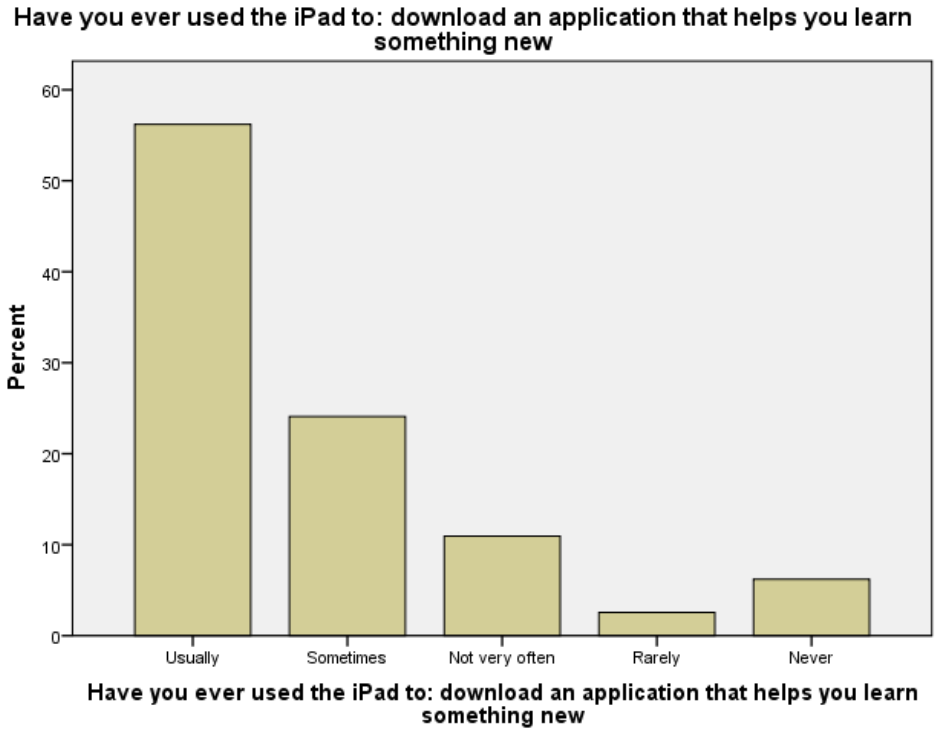


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly agree | 104 | 38.0 | 38.0 | 38.0 |
| | Agree | 120 | 43.8 | 43.8 | 81.8 |
| | Not sure | 14 | 5.1 | 5.1 | 86.9 |
| | Disagree | 16 | 5.8 | 5.8 | 92.7 |
| | Strongly disagree | 20 | 7.3 | 7.3 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

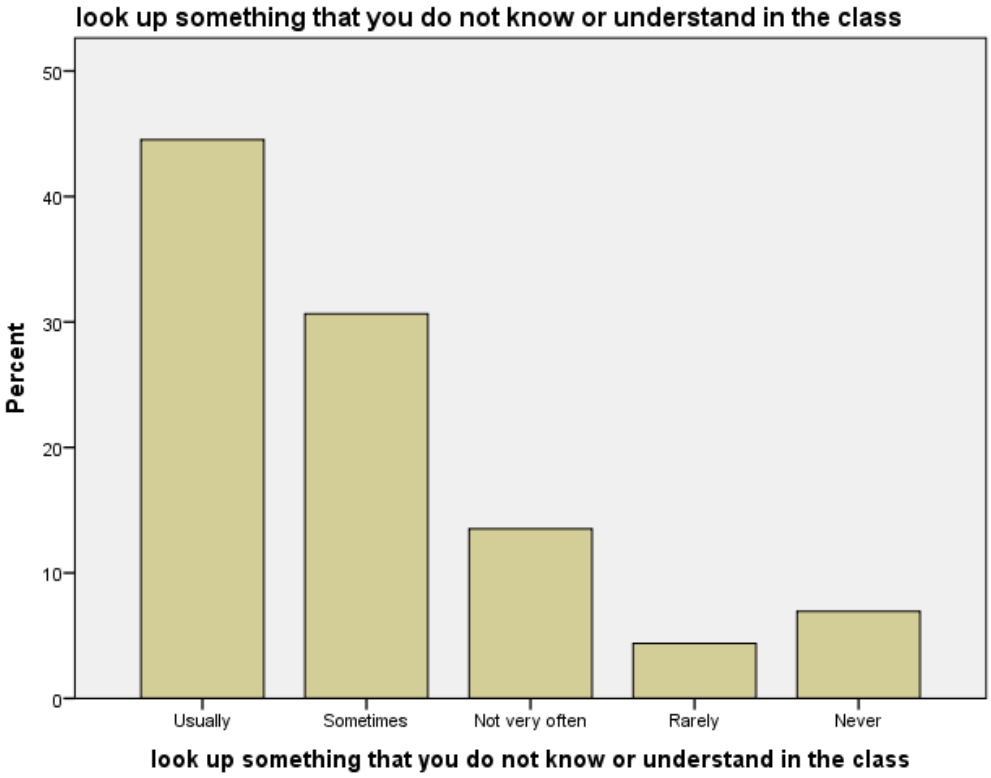


**Have you ever used the iPad to: download an application that helps you learn something new**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 154 | 56.2 | 56.2 | 56.2 |
| | Sometimes | 66 | 24.1 | 24.1 | 80.3 |
| | Not very often | 30 | 10.9 | 10.9 | 91.2 |
| | Rarely | 7 | 2.6 | 2.6 | 93.8 |
| | Never | 17 | 6.2 | 6.2 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

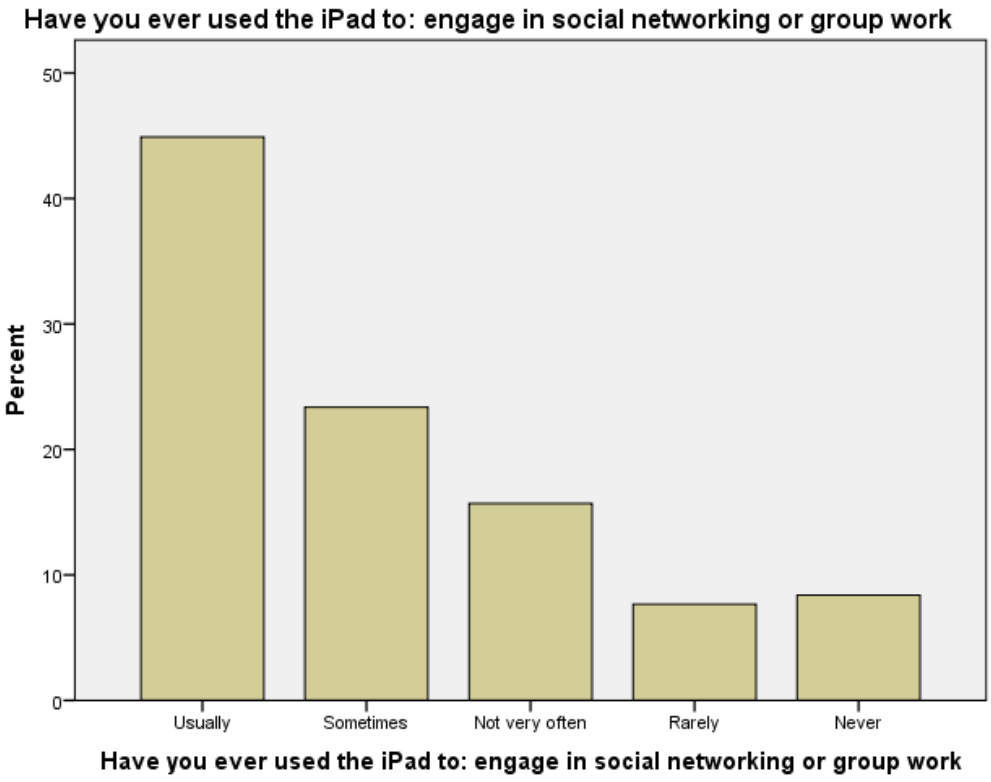


| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 122 | 44.5 | 44.5 | 44.5 |
| | Sometimes | 84 | 30.7 | 30.7 | 75.2 |
| | Not very often | 37 | 13.5 | 13.5 | 88.7 |
| | Rarely | 12 | 4.4 | 4.4 | 93.1 |
| | Never | 19 | 6.9 | 6.9 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

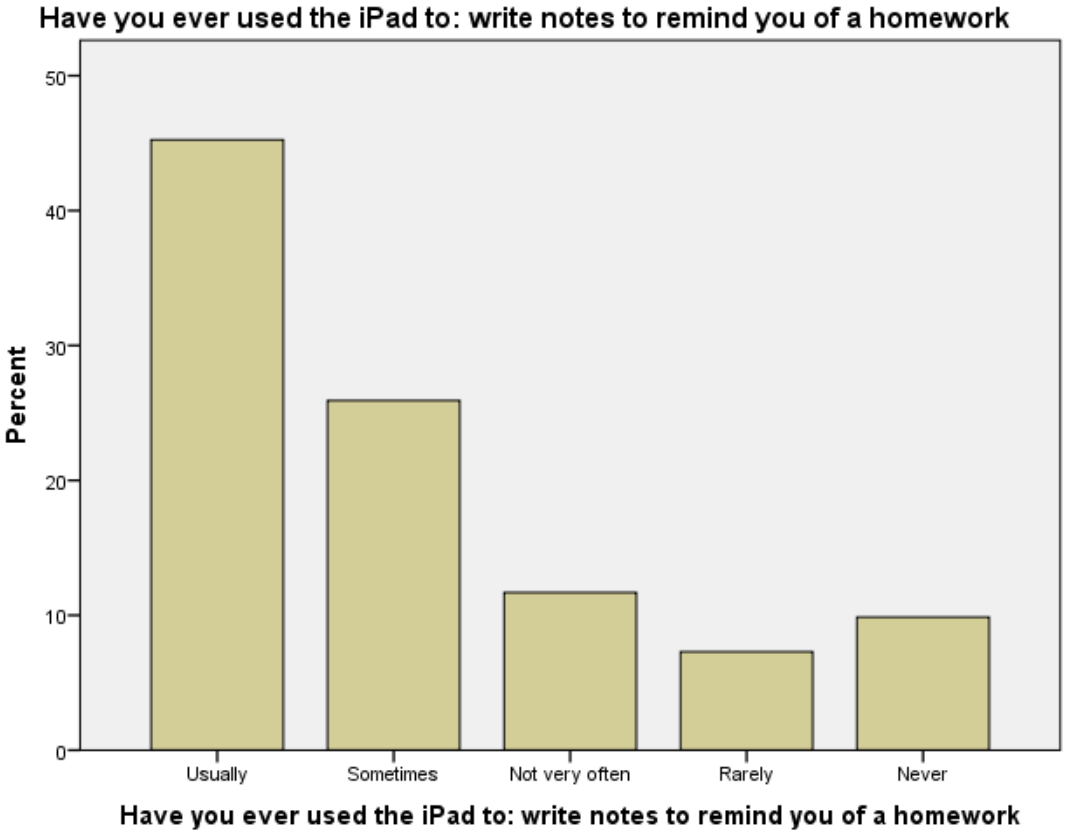


**Have you ever used the iPad to: engage in social networking or group work**

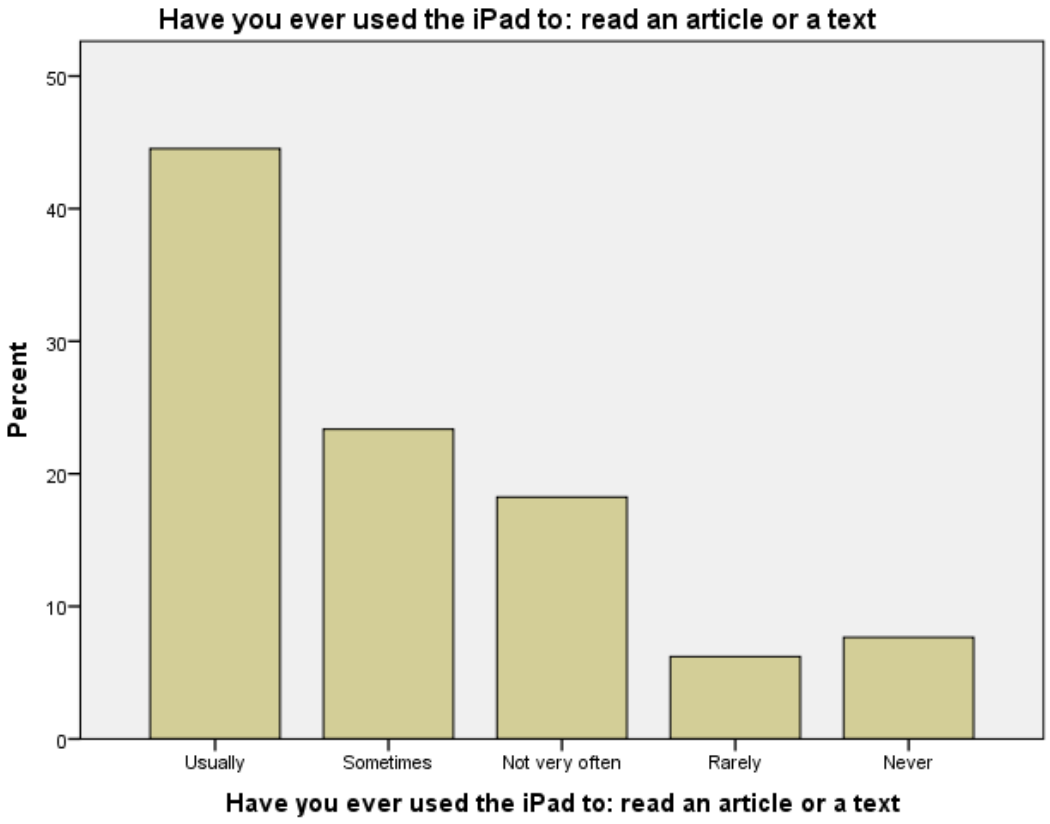
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 123 | 44.9 | 44.9 | 44.9 |
| | Sometimes | 64 | 23.4 | 23.4 | 68.2 |
| | Not very often | 43 | 15.7 | 15.7 | 83.9 |
| | Rarely | 21 | 7.7 | 7.7 | 91.6 |
| | Never | 23 | 8.4 | 8.4 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



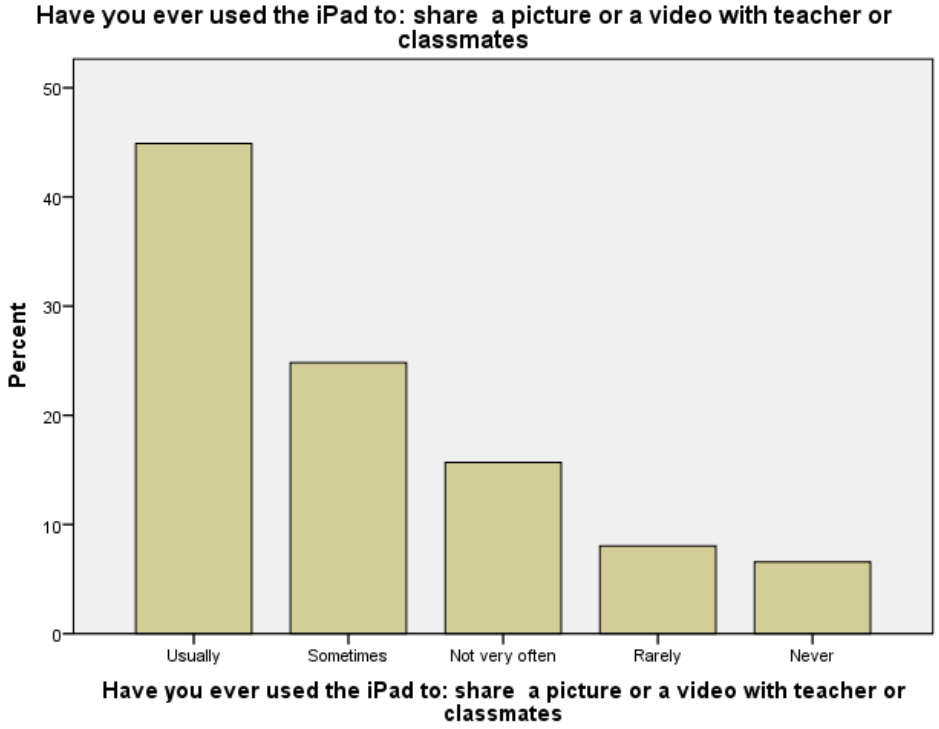
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 124 | 45.3 | 45.3 | 45.3 |
| | Sometimes | 71 | 25.9 | 25.9 | 71.2 |
| | Not very often | 32 | 11.7 | 11.7 | 82.8 |
| | Rarely | 20 | 7.3 | 7.3 | 90.1 |
| | Never | 27 | 9.9 | 9.9 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



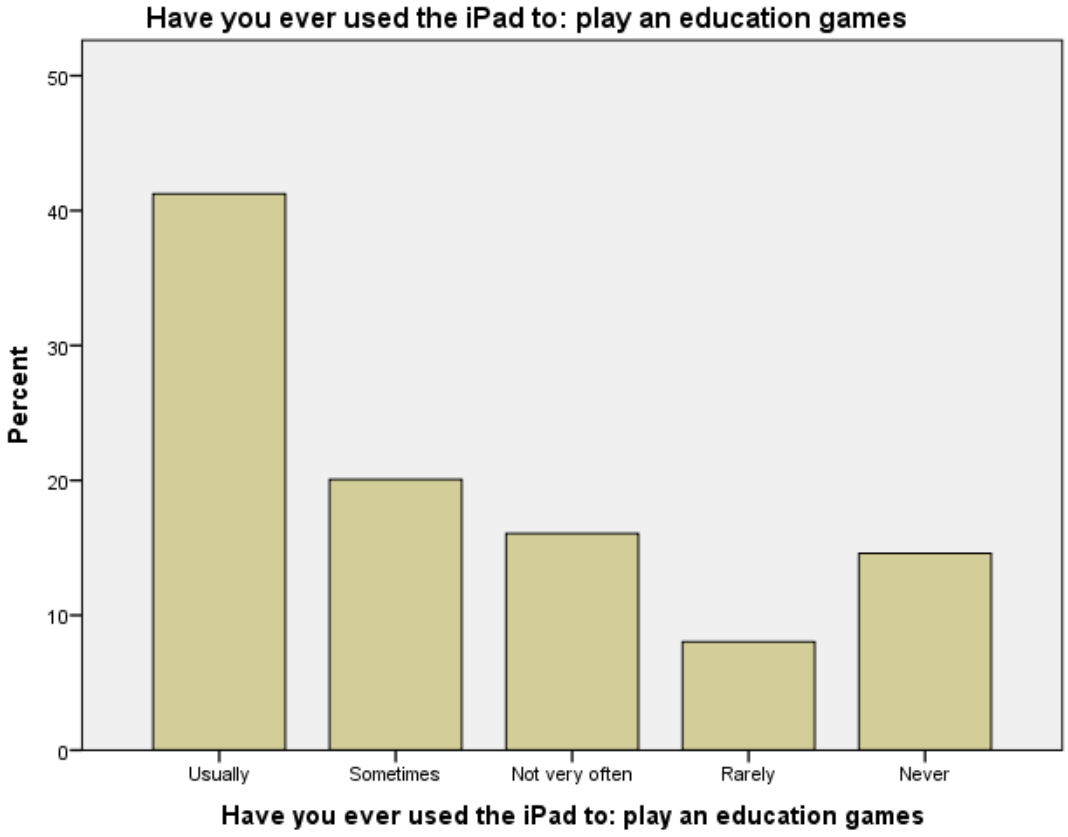
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 122 | 44.5 | 44.5 | 44.5 |
| | Sometimes | 64 | 23.4 | 23.4 | 67.9 |
| | Not very often | 50 | 18.2 | 18.2 | 86.1 |
| | Rarely | 17 | 6.2 | 6.2 | 92.3 |
| | Never | 21 | 7.7 | 7.7 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



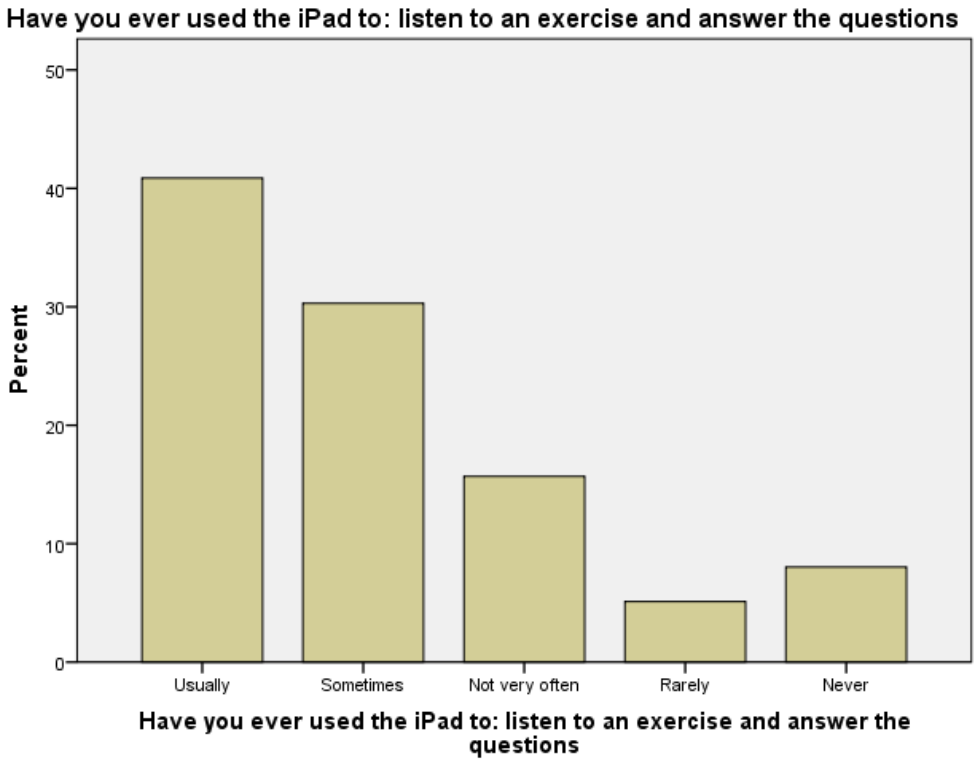
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 123 | 44.9 | 44.9 | 44.9 |
| | Sometimes | 68 | 24.8 | 24.8 | 69.7 |
| | Not very often | 43 | 15.7 | 15.7 | 85.4 |
| | Rarely | 22 | 8.0 | 8.0 | 93.4 |
| | Never | 18 | 6.6 | 6.6 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



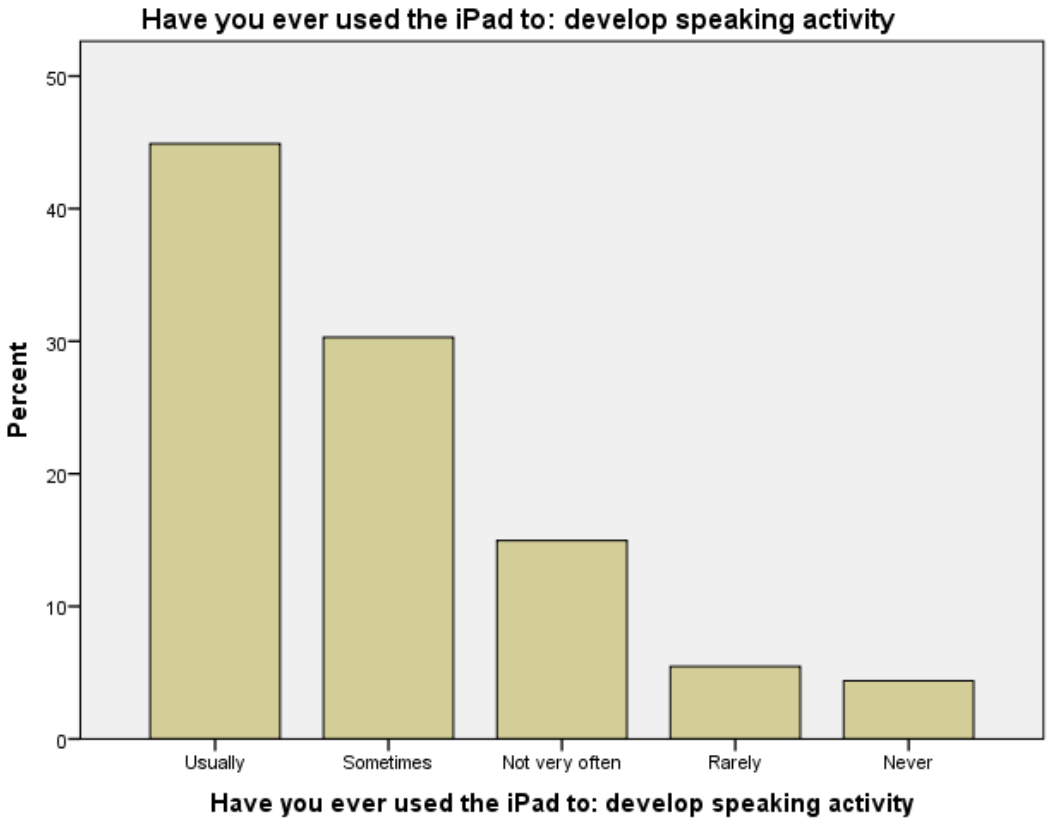
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 113 | 41.2 | 41.2 | 41.2 |
| | Sometimes | 55 | 20.1 | 20.1 | 61.3 |
| | Not very often | 44 | 16.1 | 16.1 | 77.4 |
| | Rarely | 22 | 8.0 | 8.0 | 85.4 |
| | Never | 40 | 14.6 | 14.6 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



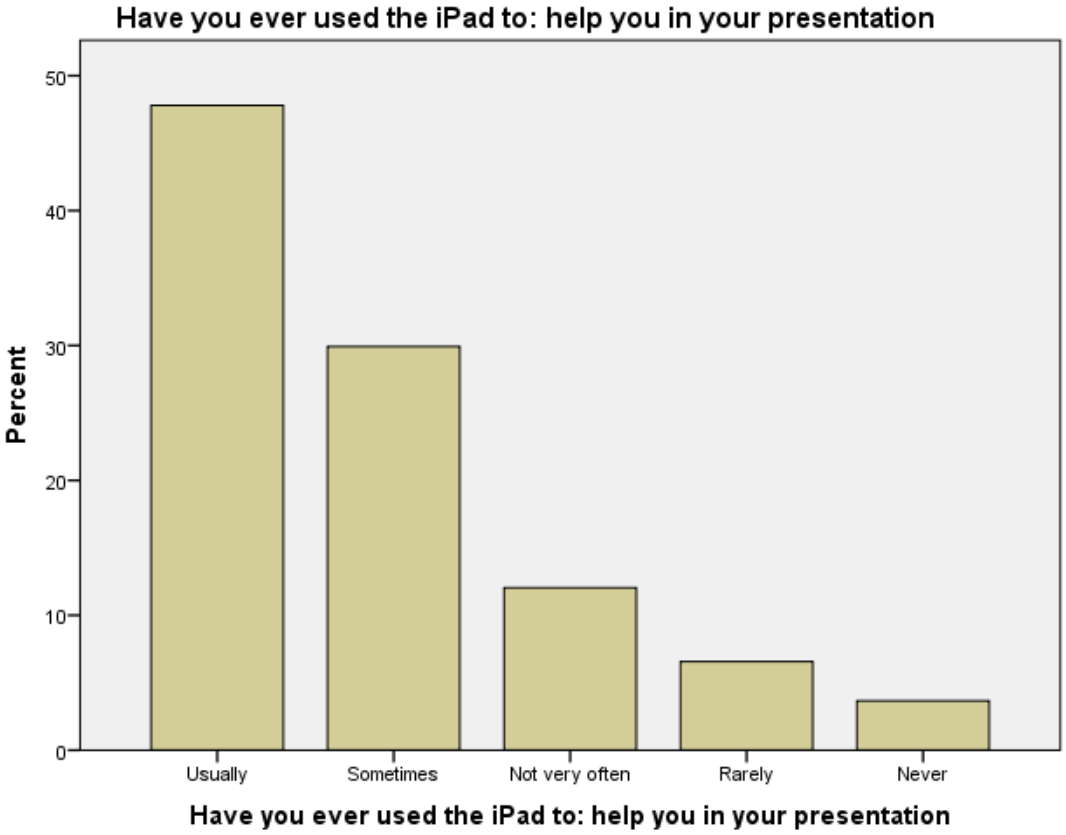
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 112 | 40.9 | 40.9 | 40.9 |
| | Sometimes | 83 | 30.3 | 30.3 | 71.2 |
| | Not very often | 43 | 15.7 | 15.7 | 86.9 |
| | Rarely | 14 | 5.1 | 5.1 | 92.0 |
| | Never | 22 | 8.0 | 8.0 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



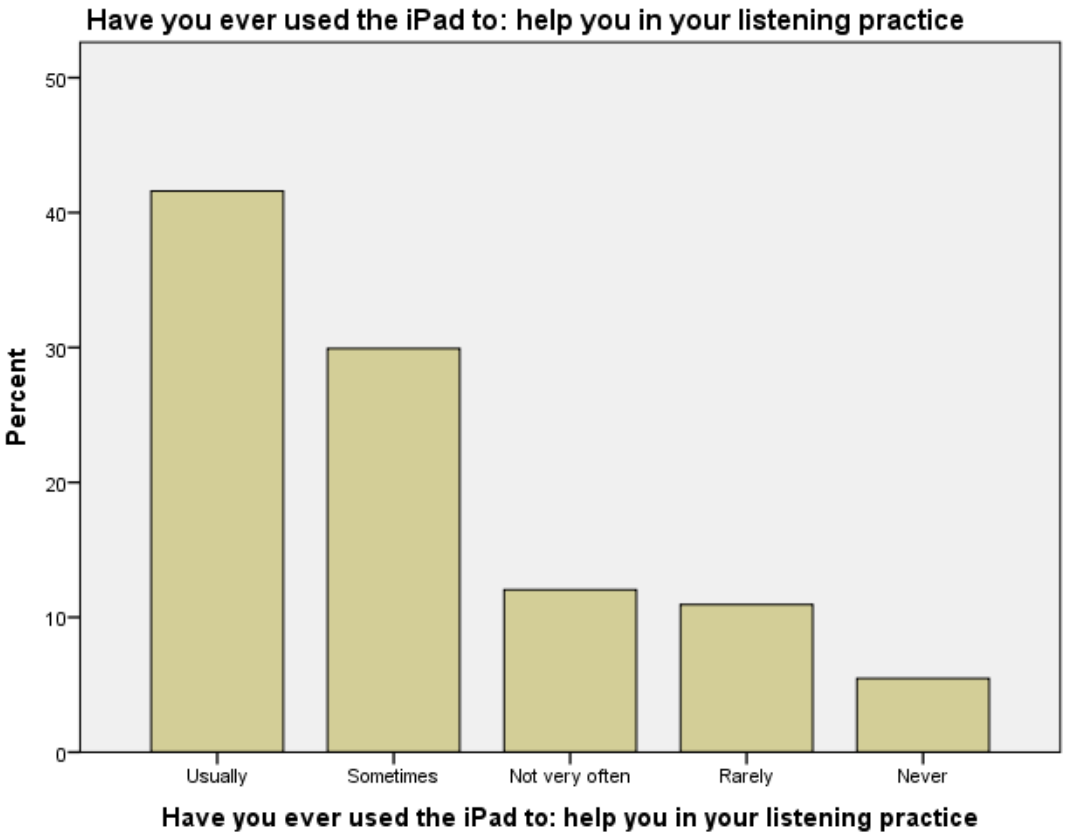
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 123 | 44.9 | 44.9 | 44.9 |
| | Sometimes | 83 | 30.3 | 30.3 | 75.2 |
| | Not very often | 41 | 15.0 | 15.0 | 90.1 |
| | Rarely | 15 | 5.5 | 5.5 | 95.6 |
| | Never | 12 | 4.4 | 4.4 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



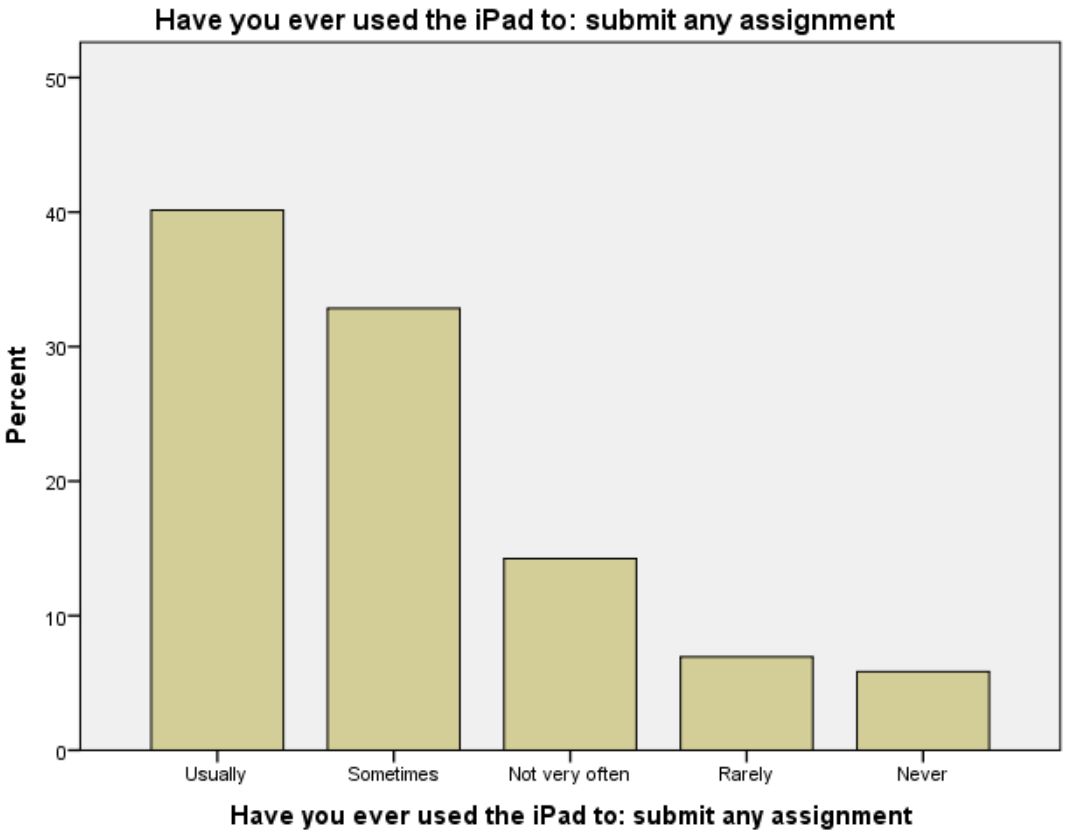
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 131 | 47.8 | 47.8 | 47.8 |
| | Sometimes | 82 | 29.9 | 29.9 | 77.7 |
| | Not very often | 33 | 12.0 | 12.0 | 89.8 |
| | Rarely | 18 | 6.6 | 6.6 | 96.4 |
| | Never | 10 | 3.6 | 3.6 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



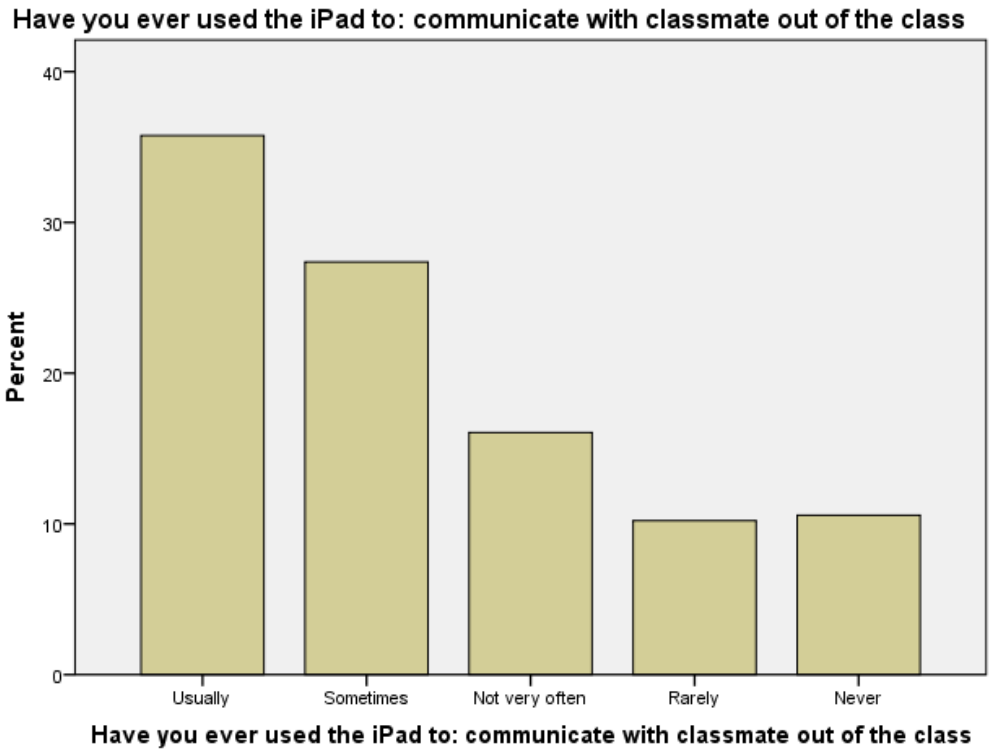
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 114 | 41.6 | 41.6 | 41.6 |
| | Sometimes | 82 | 29.9 | 29.9 | 71.5 |
| | Not very often | 33 | 12.0 | 12.0 | 83.6 |
| | Rarely | 30 | 10.9 | 10.9 | 94.5 |
| | Never | 15 | 5.5 | 5.5 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 110 | 40.1 | 40.1 | 40.1 |
| | Sometimes | 90 | 32.8 | 32.8 | 73.0 |
| | Not very often | 39 | 14.2 | 14.2 | 87.2 |
| | Rarely | 19 | 6.9 | 6.9 | 94.2 |
| | Never | 16 | 5.8 | 5.8 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 98 | 35.8 | 35.8 | 35.8 |
| | Sometimes | 75 | 27.4 | 27.4 | 63.1 |
| | Not very often | 44 | 16.1 | 16.1 | 79.2 |
| | Rarely | 28 | 10.2 | 10.2 | 89.4 |
| | Never | 29 | 10.6 | 10.6 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

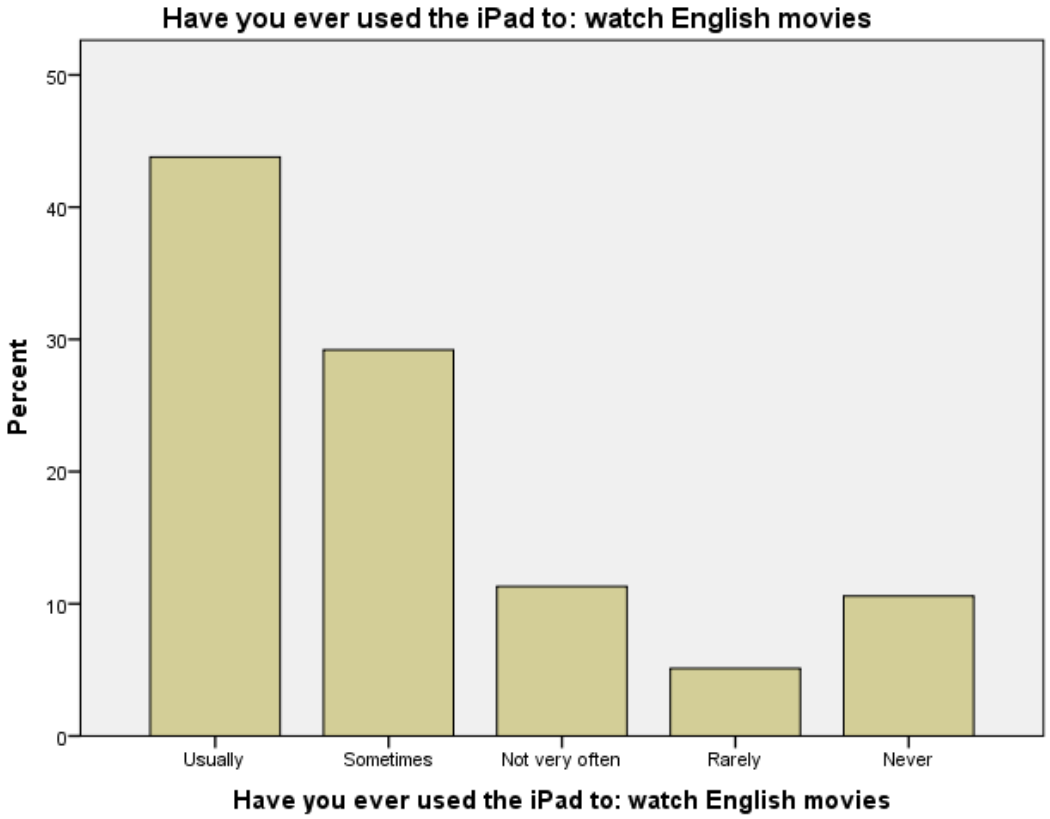


**Have you ever used the iPad to: chat with English native speakers**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 101 | 36.9 | 36.9 | 36.9 |
| | Sometimes | 71 | 25.9 | 25.9 | 62.8 |
| | Not very often | 46 | 16.8 | 16.8 | 79.6 |
| | Rarely | 19 | 6.9 | 6.9 | 86.5 |
| | Never | 37 | 13.5 | 13.5 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |

**Have you ever used the iPad to: watch English movies**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Usually | 120 | 43.8 | 43.8 | 43.8 |
| | Sometimes | 80 | 29.2 | 29.2 | 73.0 |
| | Not very often | 31 | 11.3 | 11.3 | 84.3 |
| | Rarely | 14 | 5.1 | 5.1 | 89.4 |
| | Never | 29 | 10.6 | 10.6 | 100.0 |
| | Total | 274 | 100.0 | 100.0 | |



**Appendix: G: Correlation**

| | | | |
|---|---|---|---|
| The iPad can help me learn beyond classroom | -.024 | .690 | 274 |
| The iPad is not the only helpful technology | .025 | .681 | 274 |
| The iPad can help me answer difficult questions | -.082 | .174 | 274 |
| Through the iPad I can learn after school hours | .132* | .029 | 274 |
| using the iPad I spent a lot of time off task in class | -.034 | .575 | 274 |
| the use of the iPad can simplify learning | -.008 | .901 | 274 |
| The iPad can make me more involved in learning | -.014 | .816 | 274 |
| The iPad is a waste of time | -.049 | .423 | 274 |
| I am interested to learn by using the iPad | -.052 | .390 | 274 |
| Use the iPad to listen to audio and play recording materials | .239** | .000 | 274 |
| Use the iPad to send my assignment | .260** | .000 | 274 |
| Use the iPads to participate in group discussion | .288** | .000 | 274 |
| Download and use application on the iPad | .295** | .000 | 274 |
| Use the iPad to read and understand content | .100 | .098 | 274 |
| Use the iPad to take photos or videos to be used in the class | .413** | .000 | 274 |
| Use the iPad to navigate the internet to find information relevant to my class | .577** | .000 | 274 |
| English is much easier by using the iPad applications | .026 | 663 | 274 |
| | download an application that helps you learn something new | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| -.119* | .048 | 274 | .052 | .390 | 274 | -.038 |
| -.039 | .523 | 274 | -.024 | .689 | 274 | .012 |
| -.090 | .137 | 274 | -.040 | .505 | 274 | -.022 |
| .042 | .485 | 274 | .119* | .048 | 274 | -.020 |
| -.008 | .896 | 274 | .048 | .427 | 274 | -.008 |
| -.009 | .884 | 274 | .063 | .302 | 274 | .100 |
| -.103 | .088 | 274 | .016 | .792 | 274 | -.018 |
| -.015 | .802 | 274 | -.025 | .679 | 274 | -.110 |
| -.036 | .551 | 274 | -.049 | .416 | 274 | -.006 |
| .167** | .006 | 274 | .335** | .000 | 274 | .218** |
| .253** | .000 | 274 | .266** | .000 | 274 | .290** |
| .318** | .000 | 274 | .362** | .000 | 274 | .564** |
| .259** | .000 | 274 | .165** | .006 | 274 | .676** |
| .203** | .001 | 274 | .690** | .000 | 274 | .242** |
| .856** | .000 | 274 | .297** | .000 | 274 | .372** |
| .222** | .000 | 274 | .073 | .227 | 274 | .281** |
| .027 | .655 | 274 | .049 | .421 | 274 | .016 |
| look up something that you do not know or understand in the class | | | engage in social networking or group work | | | remind you of a homework |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| .536 | 274 | -.105 | .083 | 274 | .080 | .185 | 274 |
| .841 | 274 | -.056 | .356 | 274 | -.089 | .141 | 274 |
| .720 | 274 | -.096 | .114 | 274 | -.039 | .523 | 274 |
| .741 | 274 | .007 | .903 | 274 | .093 | .126 | 274 |
| .893 | 274 | .015 | .808 | 274 | .003 | .962 | 274 |
| .100 | 274 | .069 | .258 | 274 | .024 | .698 | 274 |
| .764 | 274 | -.065 | .284 | 274 | -.002 | .969 | 274 |
| .069 | 274 | -.090 | .137 | 274 | -.007 | .913 | 274 |
| .924 | 274 | -.021 | .727 | 274 | .013 | .827 | 274 |
| .000 | 274 | .269** | .000 | 274 | .295** | .000 | 274 |
| .000 | 274 | .400** | .000 | 274 | .734** | .000 | 274 |
| .000 | 274 | .918** | .000 | 274 | .449** | .000 | 274 |
| .000 | 274 | .388** | .000 | 274 | .258** | .000 | 274 |
| .000 | 274 | .339** | .000 | 274 | .215** | .000 | 274 |
| .000 | 274 | .308** | .000 | 274 | .290** | .000 | 274 |
| .000 | 274 | .205** | .001 | 274 | .202** | .001 | 274 |
| .788 | 274 | -.011 | .861 | 274 | .013 | .836 | 274 |
| | | read an article or a text | | | share a picture or a video with teacher or classmates | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| .019 | .759 | 274 | -.029 | .636 | 274 | -.096 | .111 | 274 |
| -.084 | .164 | 274 | -.092 | .127 | 274 | .024 | .688 | 274 |
| -.033 | .592 | 274 | -.061 | .314 | 274 | -.048 | .426 | 274 |
| .031 | .611 | 274 | .031 | .612 | 274 | .004 | .953 | 274 |
| .034 | .580 | 274 | .037 | .542 | 274 | .052 | .389 | 274 |
| -.052 | .392 | 274 | .005 | .937 | 274 | .075 | .216 | 274 |
| -.013 | .831 | 274 | -.064 | .292 | 274 | .034 | .570 | 274 |
| -.001 | .984 | 274 | .026 | .664 | 274 | -.137* | .024 | 274 |
| -.023 | .709 | 274 | -.063 | .298 | 274 | .002 | .977 | 274 |
| .873** | .000 | 274 | .313** | .000 | 274 | .262** | .000 | 274 |
| .242** | .000 | 274 | .239** | .000 | 274 | .234** | .000 | 274 |
| .259** | .000 | 274 | .258** | .000 | 274 | .324** | .000 | 274 |
| .204** | .001 | 274 | .290** | .000 | 274 | .293** | .000 | 274 |
| .240** | .000 | 274 | .144* | .017 | 274 | .237** | .000 | 274 |
| .162** | .007 | 274 | .318** | .000 | 274 | .255** | .000 | 274 |
| .131* | .030 | 274 | .223** | .000 | 274 | .281** | .000 | 274 |
| .025 | .682 | 274 | .028 | .642 | 274 | -.043 | .478 | 274 |
| play an education games | | | listen to an exercise and answer the questions | | | develop speaking activity | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| -.081 | .179 | 274 | -.082 | .174 | 274 | -.007 | .910 | 274 |
| -.038 | .530 | 274 | .057 | .347 | 274 | .070 | .249 | 274 |
| .054 | .372 | 274 | .014 | .815 | 274 | -.013 | .829 | 274 |
| -.014 | .823 | 274 | -.029 | .627 | 274 | .073 | .231 | 274 |
| .013 | .830 | 274 | .046 | .445 | 274 | .080 | .187 | 274 |
| .054 | .373 | 274 | .012 | .837 | 274 | .006 | .927 | 274 |
| -.010 | .870 | 274 | -.035 | .563 | 274 | -.030 | .624 | 274 |
| -.181** | .003 | 274 | -.155* | .010 | 274 | -.083 | .170 | 274 |
| -.013 | .833 | 274 | -.088 | .145 | 274 | -.063 | .297 | 274 |
| .203** | .001 | 274 | .244** | .000 | 274 | .160** | .008 | 274 |
| .248** | .000 | 274 | .262** | .000 | 274 | .259** | .000 | 274 |
| .346** | .000 | 274 | .404** | .000 | 274 | .348** | .000 | 274 |
| .239** | .000 | 274 | .271** | .000 | 274 | .208** | .001 | 274 |
| .213** | .000 | 274 | .197** | .001 | 274 | .238** | .000 | 274 |
| .308** | .000 | 274 | .363** | .000 | 274 | .183** | .002 | 274 |
| .138* | .022 | 274 | .162** | .007 | 274 | .049 | .422 | 274 |
| -.008 | .894 | 274 | .005 | .937 | 274 | .057 | .345 | 274 |
| help you in your presentation | | | help you in your listening practice | | | submit any assignment | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| -.005 | .931 | 274 | -.088 | .148 | 274 | -.039 | .519 | 274 |
| .019 | .760 | 274 | -.115 | .058 | 274 | .008 | .901 | 274 |
| -.011 | .859 | 274 | -.132* | .029 | 274 | -.072 | .236 | 274 |
| .052 | .388 | 274 | -.039 | .521 | 274 | -.006 | .918 | 274 |
| .008 | .893 | 274 | -.006 | .919 | 274 | -.042 | .488 | 274 |
| .054 | .375 | 274 | -.020 | .743 | 274 | -.100 | .099 | 274 |
| .030 | .621 | 274 | -.034 | .572 | 274 | -.025 | .676 | 274 |
| -.001 | .993 | 274 | .042 | .486 | 274 | -.097 | .108 | 274 |
| .032 | .595 | 274 | -.043 | .477 | 274 | -.077 | .204 | 274 |
| .363** | .000 | 274 | .406** | .000 | 274 | .419** | .000 | 274 |
| .284** | .000 | 274 | .289** | .000 | 274 | .239** | .000 | 274 |
| .369** | .000 | 274 | .298** | .000 | 274 | .212** | .000 | 274 |
| .242** | .000 | 274 | .160** | .008 | 274 | .166** | .006 | 274 |
| .297** | .000 | 274 | .252** | .000 | 274 | .263** | .000 | 274 |
| .243** | .000 | 274 | .191** | .001 | 274 | .228** | .000 | 274 |
| .136* | .025 | 274 | .278** | .000 | 274 | .176** | .003 | 274 |
| .139* | .021 | 274 | -.059 | .331 | 274 | -.005 | .930 | 274 |
| communicate with classmate out of the class | | | chat with English native speakers | | | watch English movies | | |