Using the iPad in language learning: perceptions of college students

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A Thesis

entitled

Using the iPad in Language Learning:

Perceptions of College Students

by

Ghada Itayem

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Master of Arts Degree in English

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May 2014
An Abstract of

Using the iPad in Language Learning Courses: Perceptions of College Students

by

Ghada Itayem

Submitted to the Graduate Faculty as partial fulfillment of the requirements of the Master of Arts Degree in English

The University of Toledo
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Recently, there has been an increasing interest in incorporating one of the innovative technologies, the iPad, into the learning-teaching process to enhance students’ academic success in different educational contexts. However, there are a number of factors that may influence the students’ choice whether or not to use the iPad. Therefore, assessing the students’ behavioral intentions towards using the iPad is necessary.

Accordingly, this paper examines students’ behavioral intentions towards using the iPad in their language learning courses through utilizing the Technology Acceptance Model of Davis (1989). Twenty five undergraduate student participants completed an iPad-usage questionnaire to measure their perceived usefulness (PU), perceived ease of use (PEOU), attitude towards usage (ATU), and behavioral intention to use the iPad (BIU) in their integrated language learning courses (reading, writing, listening, and speaking).

The results of the study indicated that students’ perceived usefulness and perceived ease of use of the iPad positively predicted the students’ attitude towards using the iPad and their behavioral intention to use it in their language classes and other contexts.
To my father, for the passion of learning that you have instilled in me and your belief in my aptitudes!
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List of Abbreviations

ATU…………………Attitude Towards Usage
BIU………………….Behavioral Intention to Use
CALL ..................Computer-Assisted Language Learning
CMC......................Computer-Mediated-Communication
H………………….Hypothesis
LL .......................Language Learning
LLRs .........................Language Learners
MALL ..................Mobile Assisted Language Learning
ML .....................Mobile Learning
MLL .....................Mobile Language Learning
MMS ......................Multimedia Messaging Service
NBLT ......................Network-Based Language Teaching
PDA .........................Personal Digital Assistants
PU .....................Perceived Usefulness
PEOU ......................Perceived Ease of Use
SLA .....................Second Language Acquisition
SMS ......................Short Message Service
TACI ....................Technology Adopter Category Index
TAM .....................Technology Acceptance Model
TL .......................Target Language
TRA .....................Theory of Reasoned Action
WWW .....................World Wide Web
List of Symbols

\( \beta \) ........ Correlation Coefficient (Standardized Beta).

\( R^2 \) ........ Square of the sample correlation coefficient (Determination Coefficient).

\( r \) ........ Linear Correlation Coefficient (A measure of the linear relationship between two variables).

\( \alpha \) ........ Statistical significance value, which is used to refer to a pre-chosen probability.

p-value... is the estimated probability (calculated probability) of rejecting the null hypothesis (\( H_0 \)) of a study question when that hypothesis is true.
Chapter One

Language Learning

For decades, the exploration of effects of utilizing technology in the learning and teaching process have been a central issue in the literature of second language acquisition (SLA), resulting in a wealth of empirical studies in which diverse research designs are applied for this purpose (Kulik & Kulik, 1987; Grgurovic, Chapelle, & Shelley, 2013). With the fast-paced progression of technologies, the technology-supported pedagogies have also progressed to a great extent, which has paved the way for mobile learning to enter the domain of SLA. Mobile language learning (MLL), which refers to the use of mobile technologies, such as mobile phones, personal digital assistants (PDA), and tablet computers in language learning context, has emerged as the next stage of e-learning (Ogata & Yano, 2005; Burston, 2013).

In glancing at some of the related studies that have been conducted in the field of MLL, the latest Apple innovation, the iPad has already been the subject of study despite its new release in 2010 (Rosell-Aguilar, 2013; Kie, 2013; Manuguerra & Petocz, 2011, & Brown, Castellano, Hughes, 2012). Many recent studies have reported the benefits of iPad in the classroom with limited drawbacks that are related to the stability and strength of the wireless connectivity, the students’ unfamiliarity of using the device, and difficulties in typing, copying and pasting texts and images. Any related pedagogical disadvantages are not yet reported. Among the reported benefits are students’ collaboration, engagement, enhanced reading skills, and increased retention (Yang & Xie, 2013). Yet, there is a lack of literature regarding the students’ perception of using iPad in their integrated language courses (reading, writing, speaking, and listening), which
motivated me to pursue this research, especially when I have an access to the related data.

Students’ acceptance of technology used in their learning plays a major role in the success of their classes. They tend to appreciate the technology they use if it is perceived useful and easy to use. Technology also can arouse their intrinsic motivation to learn (Anderson, 2000; Heafner, 2004), which will maximize the advantage of using technology. Therefore, this research is an attempt to examine the students’ perceived acceptance of iPad technology in their integrated language learning courses (reading, writing, listening, and speaking). To accomplish this, the Total Acceptance Model of technology (TAM) (Davis, 1989), will be applied in this research. Accordingly, this research will be able to predict the students’ behavioral intention to use or not to use an iPad in terms of the students’ attitude towards using an iPad and their perceived usefulness and ease of use, which will be discussed in chapter 2.

Introduction

At the present time, the studies of the role of using modern technology in the educational field, specifically in language education is not new phenomena. It is another area that has had an impact on the language learning (LL) process ever since the development of personal computers in the sixties. The integration of technology in LL is manifest from the themes of the exemplary practices that illustrate the huge contribution of the information and communication technologies (ICT) in the field of language education, such as Computer-Assisted Language Learning (CALL), Computer-Mediated-Communication (CMC), and Mobile Language Learning (MLL). With the growing advancements and innovations in digital media, savvy researchers and educators in the fields of Second Language Acquisition (SLA) have found opportunities to enhance the
efficiency and effectiveness of the language ability and social interaction of the language learners (LLRs) in the target language (TL) by integrating technology, including digital media, into the process of LL.

Findings of previous and current related research with a focus on empirical studies have supported a claim that modern technologies have a significant positive impact on the learners’ writing, reading, listening, speaking, and cultural understanding (Payne & Whitney, 2002, Lam & Pennington, 1995). They also have enhanced the learners’ motivation in terms of increasing the students’ attempt to complete a task based on their belief about the value of the task and their ability to perform it (Lafford & Lafford, 1997; Ward & Mulholland, 2006), which has resulted in more interaction and engagement. Technology provides multiple channels to deliver a variety of input in different contexts, encourage students to develop and evaluate their language ability and students’ self-awareness of their linguistic ability gradually (Carver & Scheier, 1981; Yamada & Akahori, 2009) until they become independent and active participants of the target language (TL).

The Other Side

Despite the evident role of technology in LL, there are claims that deny the impact of media on LL like the ones that are made by Clark (1983, 1984). Clark asserted that media does not have any influence on learning. He argued that technology per se does not affect the educational content or the cognitive process of the learner. It is only a medium used for content delivery, as he noted, “media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition” (1983, p. 445). Consequently, “there are
no learning benefits to be gained from employing different media in instruction” (1983, p.450).

Apparently, the logic behind Clark’s argument is related to his own point of view of how learning occurs, which relies on transferring educational content from the teacher to the student; thus, any selected media can provide this channel of delivery, in turn, it does not impact learning. However, this contradicts how learning occurs in the brain and how media can provide more than just a channel of delivery accordingly.

In reality, at the moment of learning, the input stimulus students receive is bits of sensory information students see, hear, touch, smell, feel, or experience through movement, that is transmitted along the neural pathway and stored in the associated cortical areas in the brain that are located in each brain lobe. For example, the sounds that students hear are saved in the auditory cortex while images are stored in the visual cortex. Furthermore, when students receive information that adds to or is similar to what they already have conceded, the brain seeks relationships that help students put new connections in context. Hereafter, the brain creates paths for memories to follow by a process called pattering. This means that the brain perceives and generates patterns by relating new information with previously learned material. Thus, the input received is sent as messages to the association region to reactivate any related memories stored and connect it to the new information to build relational memories that the brain can consciously retrieve when stimulated (Willis, 2006).

Accordingly, in the context of language learning, media can impact learning. Media can be a source of multisensory input, which is essential to communication in the target language. In a real-life communication experience, the students’ learning
experience to communicate consists of association among a variety of sensory inputs like sounds they hear and images they see and read. Therefore, teachers need technology to create a meaningful learning experience that correlates with the way the brain processes and stores information, and where the students can successfully associate between what they hear and see to construct meaning. For example, to teach students how to greet in a target language, teachers can use computers to create multimedia presentations that contextualize the use of greeting dialogs in the target language. By doing this, more data input (sensory input) about the greeting dialogs will be stored in different regions in the brain; the audio heard will be stored in the auditory cortex while the visual input from video clips or graphic used will be stored in the visual image cortex simultaneously. This way of storing the input in different areas in the brain under different categories that relate to the context where greeting dialog were used increases the occurrences of across referencing among the regions where the input stored when the language learner think about the greeting dialogs. Therefore, just hearing any speech sound of those greeting dialogs later will activate the neurological pathways of the stored dialog input to pull up all those related bits of sensory input from their different storage areas in response to a single cue, which will enhance retention.

Clark also asserted “these media attributes…must be unique contributors to learning if they are to be considered necessary for learning to take place (p. 240). Even though Clark seems to loosen his position about media and learning, he still refers to the choice of media in terms of cost and efficiency, not in terms of cognition and learning.

Of course it is important for instructional designers to know that there are a variety of treatments that will produce a desired learning
goal. However, the utility of this knowledge is largely economic.

…It cannot be argued that any given medium or attribute must be present in order for learning to occur, only that certain media and attributes are more efficient for certain learners, learning goals and task. (1994, p. 22).

Also, in a world of innovative media technology, the use of technology is shaped based on the context where it is used, not necessarily in the exact way that the technician intended to, which is echoing what it is called ‘social shaping’ in academia (MacKenzie & Wajcman, 1999). For example, Skype was a created as a medium of communication, specifically, to make voice calls over the Internet. Yet, language teachers extended its use and use it as a source of authentic communication input. The authenticity of communication input consists of written and verbal real-life dialogues from native speakers of the target language, including nonverbal cultural cues and body gestures that can reflect the norms of the target language. Using Skype brought the outside world into the classrooms allowing the students to interact with speakers of the target language visually, orally, and in a written format, which engaged them into real-life situations that enhanced their language ability (Motteram, 2013). Therefore, it is apparent that technology does not have to be unique in order for learning to be achieved. Also, the findings of many empirical studies reported that students who learned via interactive media outperformed those who used non-interactive media (Moreno & Mayer, 1999; Sweller, 1999).

Lastly, among other criticisms is that CALL is technology driven rather than theory driven (Salaberry, 2001). However, this is not an issue because “educators do not
need a discrete theory of CALL to understand the role of technology in classroom; a clear theory of SLA and its implications for the learning environment serves this goal” (Egbert & Hanson-Smith, 2007, p. 3)

To sum up, it seems that Clark has formed his analysis of the media based on the non-interactive model of learning, which is not the case in learning anymore as Kozma (1994) noted, “In the present era of constructivism and distributed cognition, learning has been redefined as a highly interactive set of even shared between a learner and various human/nonhuman agents…and media (p. 24). Brain-based-learning studies also proved that multiple stimulations of senses during learning mean better memory, which media can provide. Thus, media can provide more than a tool delivering educational content. Media can influence learning.

Technologies and Language Learning

Technology helped refining the approaches taken for language teaching, learning, and development. There is a wealth of research that demonstrates the use of computer systems in the field of SLA. Thus, the value of computers in LL is unquestionable. Yet, the effectual means of using technology in terms of how technology is used to best serve the needs to the language learners is the ongoing issue (Hubbard, n.d.)

Throughout the history of the pedagogical use of technology in language learning and teaching, the use of computers has gradually developed in a continuum to meet the changes in the ideas of teaching language. The undergoing change in computers helped educators to establish new ways to teach and learn language. During the initial stages of using computers, language learners learned language through the interaction with computers generally based on stimulus and response, which echoes the behaviorist
approach. However, the interaction was limited to the capability of the software used. Later, an authentic communication input of the TL began to be considered necessary for better language learning. As a result, a shift towards a communicative approach of language learning has begun to merge in the 1970s and 1980s (Warschauer, 1996a). That resulted in the integration of World Wide Web and the rise of computer-mediated communication reflecting the interactionist approach of language learning; language learners better their learning by communicating with native speakers of the target language that resembles conversations in real life (Bahrani, 2011). Lastly, the idea of lifelong learning where learners have control over their learning anywhere at any time is recently considered important. In lifelong learning, communications should be individualized, learner center, situated, collaborative, ubiquitous, and lifelong, which is reflected in the recent use of mobile devices (Sharples, 2000).

For an overview of how technologies were used to assist language learning, the role of different type of technologies in language learning is described in the following sections. Technologies selected are computer-assisted language learning programs (CALL), computer-mediated-communication (CMC), the World Wide Web, and mobile language learning (MLL).

**Computer Assisted Language Learning (CALL) & Language Skills**

In an a broad sense, Beatty (2003) states

A definition of CALL that accommodates its changing nature is as any process in which a learner uses a computer, and as a result, improves his or her language…[this definition] encompasses a broad spectrum of current practice in the teaching and learning of language at a computer. (p. 7)
Levy (1997) defines CALL as "the search for and study of applications of the computer in language teaching and learning" (p.1). Since the development of the mainframe computers in 1950s and 60s, the intention to use computers in instruction was present. PLATO was the first mainframe to be used in instruction. It was used to provide practice materials, such as vocabulary and grammar drills to students (Beatty, 2003).

CALL’s involvement in language learning has evolved with the growth of computers and practice. Computers’ roles in LL shifted from being used as a tutor (Taylor & Perez 1989) to being used as a tool in the LL process (Brierley & Kemble 1991; Taylor 1980). The change in language teaching and learning approach shaped the development of the language-related programs. Instead of focusing on vocabulary drills and grammar exercise software, computer programs evolved to paced reading, text reconstruction, and language games, different dictionaries and encyclopedia CDs (Healey & Johnson 1995).

Later, the emphasis on improving reading, writing skills, including vocabulary and grammar learning, listening and speaking increased. Therefore, word processing applications were predominantly used. The growth of digitized speech and video supported practicing speaking and listening. Students used the computer to record and play back their voices to check their pronunciation. However, the automatic speech recognition that was part of CALL programs was not effective enough. Warschauer (1996a) pointed out that we need a CALL system to

Understand a user's spoken input and evaluate it not just for correctness but also for appropriateness. It should be able to diagnose a student's problems with pronunciation, syntax, or usage, and then intelligently
decide among a range of options (e.g., repeating, paraphrasing, slowing down, correcting, or directing the student to background explanations.  

(p. 6)

To check the effectiveness of CALL in language learning, Grgurovic, Chapelle, & Shelley (2013) completed a meta-analysis of empirical research exploring the language outcome. In their meta-analysis, they examined the empirical studies from 1970 to 2006 that used experimental or quasi-experimental design, a pre-test/post-test or post-test design, and participants’ performance on language test is measured. The outcomes indicate that groups who used CALL programs performed better than the groups who did not. In addition, a higher level of improvement is found respectively in the combined intermediate and advanced learners group, beginner and intermediate level group, intermediate, and beginner level group. For the length of treatment, CALL groups performed better than non-CALL groups regardless to the length of the treatment. Lastly, CALL groups inclined to perform better than non-CALL in most educational settings, including primary, secondary, college, private language school, and adult literacy setting.

Despite its contribution to language learning, CALL has some limitations that may impede the progress of language skills, such as lack of social interaction and authentic communication (Brine & Franken, 2006; Lasagabaster & Sierra, 2003). Also, learners are limited in input to what the software offers. Those reasons promoted the integration of WWW.
**World Wide Web (WWW)**

The Web is another form of technology that opens up opportunities for language learning. It provides language learners with substantial sources of authentic input materials that are instantly available with constant up-to-date information (Lafford & Lafford, 1997; Yang, 1998; Kost, 1999) through which the students can be aware of the culture of the TL (Moeller, 1997). Since the integration of the WWW in language learning, many studies are conducted to explore the influence of hypertext on learners’ ability to read, comprehend, and interpret the text one of which is the study of Park and Kim (2011). In their study, Park and Kim investigated the reading strategies of college-level ESL students’ strategies and their use of hypermedia and hypertext resources to complete online reading tasks. The results suggested that students were likely to click on the hypertext links to refer to other resources to gain better understanding of the online text and construct meaning of what they were reading. Yet, students were inclined towards use hypermedia, since it uses a multimedia format that provides students with images and videos that are related to the reading assignments.

Even though the Web is rich with oral, visual, and textual authentic sources of the target language, the selection of the online-materials should be appropriate and specific to address the students’ proficiency level. This selection is a crucial factor in reducing the students’ anxiety (Saito, Horwitz, & Garza, 1999) and stirs up the students’ motivation to learn more about the target language (Lafford & Lafford, 1997). Furthermore, the use of the Web in language learning can enhance the learners’ listening skills by utilizing the digitized video and audio clips of the TL. This inspired the development of different models for computer-based listening (Hoven, 1999) and a multimedia-based model of
second language acquisition (Plass and Jones, 2005). The Web also provides LLRs with contextual learning experiences in which students can get exposed to multisensory sensory modes (visual, oral, and auditory). This helps increasing the learners’ retention of information, including vocabulary acquisition, which is necessary to practice the language of the TL (Kost, Foss, Lenzini, 1999). In another web-based reading study, Koshini found that students applied different cognitive strategies to comprehend the given text (2003), which increased the students’ autonomy. In regard to those cognitive strategies, Koshini says,

Cognitive strategies are direct strategies to deal with mental processing of a target language. Meta-cognitive strategies are part of the indirect strategies to self-monitor the reading activity of oneself. They also function as a goal setting of reading and revising the use of cognitive strategies. (p. 104)

The Web can enhance the language-learning process. Yet, educators still need to select the appropriate materials that are relevant and of interest to the leaners.

**Computer Mediated Communication (CMC)**

In contrast to CALL applications, Computer-mediated-communication opens a broader scale of the communicative approach of learning the language. CMC emphasizes on the use of language in a meaningful, authentic context. There are two types of computer-mediated-communication, which are *Synchronous CMC* and *Asynchronous CMC*. *Asynchronous CMC* involves a written interaction among people in a delayed time, such as e-mails (Satillo, 2000). With synchronous CMC, “[LL can involve in] real-time [social] interaction—usually written communication—between
people [of the target language] over either a local or a wide area network” (Smith, 2004, p. 370), which is a key factor for language processing as the highlighted by the interactionist theory (Bahrani, 2011). Such interaction provides learners with opportunities for meaningful use of language and negotiation of meaning, which contribute to attaining an appropriate degree of communicative competence (Savignon & Roithmeier, 2004). Similarly, the theoretical base of the network-based language teaching (NBLT) that points out that language learning is also social and cognitive. CMC promotes improving the strategic competence of the learners, which is the ability of the learners to make up for their limitations that may experience, including the lack of lexical items or even the lack of background knowledge. “CMC can indirectly improve the second language (L2) oral proficiency by developing the same cognitive mechanisms underlying spontaneous conversational speech” (Payne & Whitney, 2002, p. 7).

CMC also encourages negotiation of meanings by requesting clarifications among speaker learners especially when they face with unfamiliar linguistic forms or lack of background knowledge, which improves their lexical knowledge (Smith, 2004) and modify their output (Blake, 2000). CMC (e.g., chat rooms) allows more time to produce more complex language than the face-to-face (F2F) communication (Warschauer, 1996b; Abrams, 2003, Kern 1995). Participants in CMC also use their cognition to interpret written text or utterances and choose the appropriate words to better express themselves. They try to relate to prior experiences (e.g., posts) and find ways to maintain collaboration. CMC interaction provides more balanced participation by LLRs (Roed, 2003). On this ground, the learners will take control of their learning and increase their
awareness of their output production and motivate them to be independent learners who take an active role in their LL (Chun, 1994).

Lastly, CMC is also goes hand-in-hand with the Situated Learning Theory (SLT), which proposes that learners create their knowledge by experiencing the subject matter in a real-life situation in and out of the classroom setting. Learners, environment, and activities are all should be engaged to create meaning and knowledge (Lave & Wenger, 1991). The educational content is situated within learner's daily practices turns into the means by which learners engage in reflective thinking (Shor 1996).

**Mobile Language Learning (MLL)**

With the increase advancement and ownership of wireless mobile technology, including smart phones, iPods, and hand-held tablets, such as the iPad and Kindle, researchers find an interest to investigate their integration into the language learning process. In connection with Theory of Technology-Mediated Lifelong Learning proposes that personal technologies and educational goals can meet to promote long-life learning environment by providing technology specification that meet the communication needed: communication should be individualized, learner centered, situated, collaborative, universal, and lifelong. Thus, the technology should be personal, user centered, mobile, networked, universal, and durable respectively, which Sharples (2000) identifies the associated environment as a handheld learning environment. Accordingly, mobile devices can be correlated to Sharples’ view of such learning environment that has been already taken place in the context language learning as found in the literature of SLA.

In related research, students used their mobile phones digital cameras, and MP3 to get involved in real-life situations where they had to report their encounters with any
foreign cultures and then share it electronically with their peers (Comas-Quinn & Mardomingo, 2009). Mobile-based systems were successfully used to teach pronunciations and listening skills (Uther, Zipetria, Uther, & Singh, 2005). Mobile phones are also increasingly used to enhance learners’ lexical by sending messages that include word of the day or short messages students need to response to via the short message service (SMS) (Stockwell, 2010, Lu, 2008, Kennedy & Levy, 2008) and grammar, listening, and speaking (Li & Hegelheimer, 2013). In addition, they provide learners, specifically in rural areas with a constant access to authentic educational materials (Valk, Rashid, & Elder, 2010).

In the study of Wang and Smith (2013), the teachers sent related comprehension questions and quizzes to the students’ emails, and to be accessed through the students’ mobile phones for which they were customized. For student-teacher interaction, a comment-quiz system was used. Based on the results, the overall perception of most of the students was favor to using mobile phones for reading and grammar.

In another study, the researchers, Kim, Rueckert, Kim and Seo (2013), conducted pre and post survey to examine the MA of TESOL students’ perception of using mobile phones for language learning using the Technology Adopter Category Index (TACI) that was developed by Dugas (2005). According to the results of the study, the TACI scores of the group who used mobile phones for learning were lowered after the exposure, which means the students are very comfortable within innovation. This also demonstrates the students’ willingness to adopt mobile learning into their language learning process.

In summary, “MALL differs from computer-assisted language learning in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or
spontaneity of access and interaction across different contexts of use” (Kukulska-Hulme & Shield, 2008, p. 273). Mobiles are similar to computers in terms of their technical specifications that can be employed in language learning, including their wireless Internet access Wi-Fi, quick code readers, instant short messages (SMS), Multimedia Messaging Service (MMS), applications like YouTube, Skype, and Facebook. They support collaboration and social interaction with a constant access to authentic and cultural materials of the TL. Lastly, the concerns with the sizes of the screen of mobile phones and lack of related language applications are solved with the introduction of tablets, including iPad generations, Galaxy tablets, and Kindle. Lastly, although, MLL has a favorable perception by students, the empirical studies that prove their effectiveness are still limited.

**Why the iPad?**

With the rapid technological innovations of mobile computers, a growing trend in mobile-learning (m-learning) education has been increasingly evident. With a focus on mobile devices for learning, educators find new opportunities for more collaboration, sharing, and interaction in real-time. Hand-held computers have attracted the attention of a number of educators to exploit this technology for their computing power and portability. Even though there are wide range selections of tablets in the market that can be utilized in language learning, iPad-related literature is the focus in this section, as it is directly related to the tablet experience of the sample population who completed the survey of this study.

The late Steve Jobs, the co-founder, Chairman, and CEO of Apple Inc., identified the iPad as “[the] most advanced technology in a magical revolutionary device at
unbelievable price” (“Steve Jobs introduces Original iPad - Apple Special Event (2010)”). In a brief technical description, A thin device that comes in 13.4 mm or 8.8 mm thickness, 1.5 pounds or 1.3 pound weight, very powerful dual-core processor, very fast CPU and graphics, with legendary battery life of 10 hours. It has a full capacitive multi-touch 9.7 IPS display that is excessively responsive, Wi-Fi, Bluetooth, 16-64 GB flash drive, speakers, and microphone, with abundant built-in applications that a user can access all by creating a one-time Apple ID. Furthermore, the powerful iPad operating system iOS 7, unifies Apple applications platform across its devices, it also includes AirPrint and AirPlay for wireless printing and streaming media respectively. Additionally,

You don’t have to adapt to the technology because it’s already designed around you — you develop a connection with it. It becomes more to you than just a device. iOS 7 invites that kind of connection. Interactions are dynamic. Animations are cinematic… [Its] distinct and functional layers help create depth and establish hierarchy and order. The use of translucency provides a sense of context and place. And new approaches to animation and motion make even the simplest tasks more engaging” (“iOS7: When”).

Most importantly, it is highly secured that issues, such as viruses and malware are not of a concern.

For educational purposes, the iPad has iBooks and iTunes University (iTunes-U) that users can access freely with their Apple ID. Using the fully integrated iBooks store, users can access vast published books from major education publishers, such as McGraw-
Hill, Pearson, Harper Collins, and Penguin, see a sample before purchase, and then
download right on the bookshelves, that is a feature of iBooks library. iBooks is more
than an e-reader; it is a virtual personalized library that resembles ones’ physical library.
With a single tap, users can read books, zoom in, change a font size and type, flip pages,
highlight, and create their own note cards. iBooks author is another app that is available
for educators who desire to create, teach, and publish their own interactive books, which
help teachers to personalize materials to meet the students’ levels and to eliminate the
costs of purchasing hardcopy books. Furthermore, lifelong course learning material from
prestigious educational institutions, such as Yale, Stanford, Harvard, and MIT whether
books, videos and lectures they are all at the students’ fingertips at no cost through
iTunes U. There are more than 5000 iTunes U courses for different subjects and grade
levels that students can browse and use. To help the students get more out of their
classes, iBooks is equipped with a note-taking feature, share-information feature, and
built-in dictionaries all in one package. Users can also make their own presentations
using Keynotes, prepare papers with Pages, and convey ideas by charts and tables with
Numbers all by using iWork app. Managing homework materials can easily be
completed by the homework marking features that iPad offers. Lastly, the Mac Apps
store is packed with more than 65,000 apps, including educational ones that enhance any
lesson. (Cooper, 2012; Tomassini, 2102; “iPad in education”).

The uniqueness of [iPad] is that they put the main educational uses of
technology…into one small power device, instead of being dispersed
across mobile phones, media players, and computers. Who wants to carry
several devices around when one device can offer a light and portable, yet
powerful, learning resource?” (Sandars, 2010, p. 270).

Although, iPad is a new product that was released in 2010, 1.5 million units are already in use in education and 20,000 education apps in iTunes store as reported by Apple officials (Tomassini, 2012). The introduction of the Apple iPad in 2010 opened many learning possibilities. Meurant (2010) says, “[iPad, its operating system and innovative apps are a potential game changer. An integrated ecosystem is being established will likely revolutionize education” (p. 54). Consequently, further research to investigate the acceptance and efficacy of the iPad in difference educational context is deemed necessary.

Since the release of the iPad is relatively new, few empirical studies have been conducted to examine the impact of iPad on the teaching and learning process. Yet, the results are inspiring. The iPad influences reading and writing positively. Harmon (2012) investigated the impact of using of iPad on reading and writing. In his study, the students used the iPad in different ways. Students accessed their materials via iBooks, wrote journals, completed formative assessments, and used educational apps to collaborate and compete with each other like the app WordFlic. The results were in favor of the experiment group who used iPad. They scored better in their reading comprehension, and language use tests. McClanahan, Williams, Kennedy, and Tate (2012) also found a positive result in using the iPad in reading and writing.

iPad promotes engagement, collaboration, and productivity. A study in which the feasibility of integrating iPad into the English language curriculum at a Japanese university was examined, the overall results were positive with few drawbacks. iPad offers speed and flexibility. Researchers reported the usefulness of iPad depends on the
nature of the task given and the students’ familiarity of iPad apps. iPad’s portability
enabled collaboration and sharing among students, which contributed to completing the
task efficiently. The multi-functional capability of iPad was another advantage. Yet, there
was a drawback that was related to the slow Wi-Fi connectivity of the institution (Brown,
Castellano, Hughes, & Worth, 2012).

Moreover, Henderson & Yeow, (2012) made an attempt to explore the benefits of
using iPad at a primary school. In addition to collaboration and engagement, researchers
noted the portability and Internet connectivity wirelessly are the significant features. Ease
access of information and quality of work presented are strength of an iPad. Overall, iPad
enhanced students’ learning but improvement in grades was not noticed.

Furthermore, Manuguerra and Petocz (2011) explored the role of iPad in tertiary
education. They assert that iPad enhanced the engagement with learning for the in-
campus and distant-learning students. The recorded video lectures were the greatest
advantage, specifically in the science courses. Students had access to information
constantly. Also, they made the difficult concepts easy to tackle.

iPad enhances oral proficiency and increases linguistic complexity. In the
advanced German conversation class, Lys (2013, examined the effects on the oral
proficiency of the learners, Lys reported that iPad is very suitable to practice listening
and speaking skills. Using iPad enables interaction and promotes engagement in a
meaningful discourse. iPad features, such as FaceTime helps learners to get involved in
real-time conversational activities, news broadcast motivates learners to know more
about the TL and language. Students also showed a favorable attitude towards using iPad
in their course.
Yang and Xie (2013) reported the use of iPad in one-hour self-study. In their study, heritage Chinese students used iPad, during one class session, to find the meaning, pronunciation, definition, and visual illustration for each idiom given to strengthen the understanding and retention of those idioms. The students were also required to use the idioms in sentences, and then post their work on the Wordpress app to promote collaborative and self-generating learning. The results of the study indicated that the students who used the iPad retained 40 percent of the given idiom in one hour. Yet, some students faced difficulties copying and pasting texts and images on the iPad. On the other hand, Lewis (2009) found out that iPad did not enhance the students’ retention of facts of reading passages. Whether students used iPad, paper, or desktop, they all retained facts at equal levels. Yet, the students who used iPad comprehended the meaning of the article better than those who read on the desktop computer. Furthermore, those who read on paper outperformed those who used iPad and desktop computer in understanding the theme and meaning of the article.

As discussed below, iPad has also different applications to better the language ability of the learners in different context that yet needs further empirical testing. “The most significant feature for the use of iPad in the SLA is multitasking ...through a combination of app-switching features and background processes manage by the operating system itself” (Meurant, 2010, p.56).

Learning a language is best achieved in a communicative context similar to those in the real-world situations. In such context, the learner is exposed to a combination of a sensory input, which consists of the speech sound the leaner hears, and the lights that are reflected from the objects to be acquired (Coleman, n.d., p.33). With the use of iPad, the
teacher can provide a complete presentation, using Keynotes, which resembles what the learners may experience in the real world. The teacher can create a presentation that consist of visual elements that can be in 3D rotating format, embedded videos mimic real-life dialogues of the TL, animations, and streaming audio clips or clips of her voice in the TL in an interactive, immersive, and engaging way. LLRs can have a hands-on-experience where the learners can browse, swipe, zoom, or click through, switch rapidly between several on a multi-touch screen apps to learn the TL.

As for vocabulary acquisition, linguists like Yngve (1996) and Coleman (n.d.), assert that speech sounds are mere physical waves that do not carry meaning, so the interpretation of those speech sounds only depends on the experience that the learner acquires through communicative experience and observation in real-world environments. Therefore, iPad offers well-suite accommodation. By using iBook author, the teacher can create an interactive slideshow that includes related-gallery, media files, and Popover. Learners can see a sequence of interactive images with callouts in different contexts that they can pan and zoom, while watching different related-authentic movie files to cover the scope of reference of that lexical. Popover offers learners with an overlay of visual and textual details once the learner tap on an image. This will allow learners to identify various aspects of a given lexical, which enhances the depth and breadth of the learner vocabulary knowledge that is also critical for reading comprehension.

For the interactive and hands-on-experience functions that iBook app provides, iPad can suit beginner LLRs. For beginners of language learners whose language proficiency of the TL is low, understanding teacher’s explanation is a challenging task. As Coleman (n.d.) notes, “Generally speaking, explanations per se, which are
metalinguistic by nature, are necessarily more complex than the things [teachers intend to explain]” (“ESL Teacher Resources”). Thus, showing can be more effective than explanation and translation. During the three stages of learning, for example, learning in simulation-gaming (briefing, activity, and debriefing), the materials can be presented with the interactive images in context with embedded related-audio files (that can be recorded by the teacher’s voice). With the multitasking capability of iPad and depend on the teacher’s display of the martials, the learners can engage by tapping, telling, and then verifying. The learners can later reflect on their experience and the language knowledge they gained by playing any of the iPad educational apps of their choice or the teacher’s. The portability and simplicity of use of the iPad can also promote collaboration among those learners (Meurant, 2010, p. 55), which can boost their confidence to put the knowledge gained in practice.
Chapter 2
Methodology

Theoretical background: Research Design

Technology acceptance model (TAM)

TAM introduced by Davis (1986, 1989) is considered one of the widely used models to identify the causes of accepting different technologies in various contexts (Surendran, 2012). TAM has received much empirical support as a robust model for evaluating technologies and users’ technology acceptance at the level of the whole system (Park, 2009; Schoonenboom, 2012; Joo & Sang, 2013).

TAM is formed based on the principles of a general theory of behavior, which is the theory of reasoned action (TRA). In TRA, Fishbein and Ajzen (1975) propose the existence of a relationship among subjective norms, attitudes, and behaviors: one’s behavioral intention to behave in a certain way is determined by one’s attitude towards the behavior in question. So, someone’s intention to behave a certain way can be predicated by their attitude towards the behavior in question and how they think people will perceive their behavior.

Accordingly, Davis (1989) suggests that the three salient beliefs that determine the users’ behavioral intention to use a system as illustrated in Figure 1 are: perceived usefulness (PU), perceived ease of use (PEOU), and attitude toward usage (ATU). Davis (1989) defines perceived usefulness as “the degree to which a person believes that using a particular system or application is easy to use” (p. 320); perceived ease of use (PEOU) is defined as, “the degree to which a person believes that using a particular system would be free of effort” (p. 320); and, in turn, attitude towards usage (ATU) refers to “the degree to
which an individual evaluates and associates the target system with his or her job” (Davis, 1993, p. 476).

The importance of TAM arises not only from identifying the reasons behind users’ refusal or acceptance of a certain system, but also improving users’ acceptance through identifying those reasons of refusal.

**Research Model**

Lack of users’ acceptance of a selected information system (technology) has played a crucial role in the success of that technology (McCarrol, 1991). Thus, the purpose of this study is to examine students’ acceptance of using iPad system in their language learning courses (reading, writing, speaking, and listening) through examining their behavioral intention to use the iPad system in their LL courses. This acceptance is recognized through the students’ intention to use this technology when they perceive it useful for their learning objectives and not difficult to use. Therefore, the technology acceptance model is utilized for this study since it reflects the environment of the iPad usage in the related context.

TAM assumes that human behavioral intention is a result of a cognitive process by which a decision is made (Venkatesh, et al., 2003). Therefore, the students’ acceptance of using iPad in their LL is influenced highly with their perceived usefulness of iPad and their perceived ease of iPad use, which in turn influence their attitude towards iPad usage and behavioral intention to use (BIU). (see Figure 1.)
Methods

Instrument

The completed instrument to test the proposed hypotheses was a questionnaire with two parts (see Appendix A). The first part of the questionnaires contains demographic items that are discussed in details in the “Subject” section of this chapter. It screened the respondents’ background and experience of using the iPad in their language learning courses (reading, writing, listening, and speaking), so that the students’ attitudes and beliefs were measured based on their actual experiencing of using the iPad system.

The second part of the questionnaire contained twenty-eight items pertaining to the four constructs of TAM: perceived usefulness (PU), perceive ease of use (PEOU), attitude towards usage (ATU), and behavioral intention to use the iPad (BIU). There were ten items that related to the students’ perceived usefulness (e.g., “Improved my reading”, “Helped me quickly view the homework assignments of my course”). There were eight items related to the students’ perceived ease of use (e.g., “I reviewed the homework assignments with no trouble”, “It was easy to download the books for my
Five items were related to attitude towards usage (e.g., “I was happy to use the iPad for learning”) and other five items were for the students’ behavioral intention to use the iPad system (e.g., “I think I will use the iPad for my coursework most of the time”). At the end of the survey, there was a place for the students to write any related suggestions or comments. For a survey sample, see Appendix A at the end of the thesis. For each item listed in the questionnaire, respondents were asked to rate their experience of using iPad by circling the number that best represents their perception. In addition, items used were similar to those that were used in previous studies in the related literature (Joo & Sang, 2013; Schoonenboom) with some modification to fit the context of the iPad use.

*Measurement scales* Perceived usefulness, perceived ease of use, attitude towards usage, and behavioral intention to use: they are the four constructs of TAM as illustrated in Figure 1. Accordingly, the hypothesized measurements included were two measures as independent variables: perceived usefulness and perceived ease of use, and two measures as dependent variables: attitude towards usage and behavioral intention to use.

The variables were operationalized using Likert-scale items measuring the students’ perceptions, attitude, and behavioral intention as listed in Tables 1, 2, 3, 4 respectively. Lastly, students’ responses were solicited using a Likert seven-point scale coded as, 7: *strongly agree*; 6: *moderately agree*; 5: slightly agree; 4: neutral/ no opinion; 3: *slightly disagree*; 2: *moderately disagree*; 1: *strongly disagree.*
Table 1: *Measures of perceived usefulness of the iPad*

**Measures of PU**

<table>
<thead>
<tr>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved my reading.</td>
</tr>
<tr>
<td>Improved my writing.</td>
</tr>
<tr>
<td>Improved my listening.</td>
</tr>
<tr>
<td>Improved my speaking.</td>
</tr>
<tr>
<td>Helped me take control over the homework assignments of my course.</td>
</tr>
<tr>
<td>Helped me quickly view the homework assignments of my courses.</td>
</tr>
<tr>
<td>Was helpful to study the reading and writing materials.</td>
</tr>
<tr>
<td>Was helpful to study the speaking and listening materials.</td>
</tr>
<tr>
<td>Improved my overall performance in the reading and writing classes.</td>
</tr>
<tr>
<td>Improved my overall performance in the speaking and listening classes.</td>
</tr>
</tbody>
</table>

Table 2: *Measures of perceived ease of use of the iPad.*

**Measures of PEOU**

<table>
<thead>
<tr>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>I reviewed the homework assignments with no trouble.</td>
</tr>
<tr>
<td>It was easy for me to remember how to find the materials for my courses.</td>
</tr>
<tr>
<td>I found it not difficult to study the reading and writing materials.</td>
</tr>
<tr>
<td>I found it not difficult to study the speaking and listening materials.</td>
</tr>
<tr>
<td>It was easy to download the books for my courses.</td>
</tr>
<tr>
<td>Made studying reading and writing easier.</td>
</tr>
<tr>
<td>Made studying speaking and listening easier.</td>
</tr>
<tr>
<td>Overall, the iPad was easy to use in my courses.</td>
</tr>
</tbody>
</table>
Table 3: Measures of attitude towards using the iPad.

<table>
<thead>
<tr>
<th>Measures of ATU</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was happy to use the iPad for learning.</td>
</tr>
<tr>
<td>Buying the iPad gives me many benefits.</td>
</tr>
<tr>
<td>Using the iPad in the classes provided me a lot of fun.</td>
</tr>
<tr>
<td>I liked the idea of using the iPad to view the homework assignments of my language courses.</td>
</tr>
<tr>
<td>It was a good idea to use the iPad in the language learning classes.</td>
</tr>
</tbody>
</table>

Table 4: Measures of behavioral intention to use the iPad.

<table>
<thead>
<tr>
<th>Measures of BIU</th>
</tr>
</thead>
<tbody>
<tr>
<td>I frequently used the iPad during class time.</td>
</tr>
<tr>
<td>I used the iPad for my coursework most of the time.</td>
</tr>
<tr>
<td>I think I will use the iPad for my studies in the future.</td>
</tr>
<tr>
<td>I think I will use the iPad to search for educational resources in the future.</td>
</tr>
<tr>
<td>I am using the iPad in different context after I completed all of my language courses.</td>
</tr>
</tbody>
</table>
Students selected were from five Composition classes in the English department. Those classes are offered for non-native English speakers. Student respondents were also from various nationalities from which the majority was from China and Saudi Arabia respectively (see Table 5).

The selection of those courses was based on the following reasons: first, substantial number of the students in those English courses was college freshmen or sophomores, which represent typical college students. Second, the students of the selected courses were usually former students of an intensive English program who had an experience using iPad in their preparatory language courses before they got the chance to be enrolled in their academic English composition courses. Finally, the sample subject selected was the most accessible one because of time constraints and the required criterion guidelines.

Table 5: Demographic profile of respondents

<table>
<thead>
<tr>
<th>Demographic</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>17</td>
<td>68</td>
</tr>
<tr>
<td>Female</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-24</td>
<td>22</td>
<td>88</td>
</tr>
<tr>
<td>25-34</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>35-44</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>45 or order</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country of origin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>12</td>
<td>48</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Korea</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>South Korea</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Lebanon</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Major</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finance</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Computer Science</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Nursing</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Respiratory Care</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>International Bus. &amp;</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Marketing</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Profession</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----</td>
<td>----</td>
</tr>
<tr>
<td>Mechanical Engineering</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Engineering</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Psychology</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Math</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Jazz Guitar performance</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Communication</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Accounting</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Experience using iPad &gt;= 6 weeks</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Previous iPad general usage</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>36</td>
</tr>
</tbody>
</table>

**Procedure** This study was to investigate the language learners’ perception about using iPad in their English language learning. Accordingly, all students received a survey with 28 items to rate.

Upon getting the approval from the director of the ESL composition program at the University of Toledo and the associated instructors of the selected courses, I scheduled specific days to conduct the study.

After obtaining the students’ approval via a written consent forms (see Appendix A for a sample), I distributed the survey and demographic forms in each class. Then, student respondents were asked to complete both forms and ask any questions they may have had. They were also asked to write any comments or suggestions regard their use of iPad in the provided section at the end of the survey. Students were also informed that they could stop participating in the experiment at any time without any harm.

All participation took place in regular classrooms during regular class times. The total experiment took approximately twenty minutes to complete. Subsequently, students and teachers were thanked for their participation and debriefed.
Data Collection and Analysis

Two hard-copy questionnaire forms were administered to twenty five students, from five different classes, to fill out. However, twenty two data responses were used because the responses of three students were eliminated; two respondents did not fit the criterion of having six weeks or more experience using the iPad in their LL courses, while the other respondent did not follow the directions in using the Likert-scale.

The students’ responses of ranking their perceived usefulness and ease of use of the iPad, their attitude towards using the iPad, and their intention behavioral to use it were recorded, using value of 1 if the student selected the strongly disagree option, value of 2 if the moderately disagree option was selected, value of 3 if slightly disagree option was selected, value of 4 if the neutral option was selected, value of 5 if slightly agree was selected, value of 6 if moderately agree was selected, and value of 7 if strongly agree option was selected. For the demographic questionnaire, the information was coded as it was answered.

After the data was collected and checked for completion, it was entered into the SPSS software; a statistical program for social sciences, to check the validity of the instrument used and provides related analysis. Then, test the proposed hypothesis. Since this study employed a structural equation modeling to develop the relationships among its factors: perceived usefulness (PU), perceived ease of use (PEOU), attitude towards usage (ATU), and behavioral intention to use (BIU), a path analysis test was completed to examine the causal relationships between the independent variables and the dependent variables of the proposed hypotheses (see Table 6). Path coefficient values and their significance will be also given, analyzed and discussed in chapter 3.
Research Hypotheses

In line with the objective of the research and the related literature of various TAM studies, this study examined the following hypothesis (see Figure 1, Table 6)

Table 6: Hypotheses and their casual paths to be examined.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Cause</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Perceived usefulness (PU)</td>
<td>Attitude towards usage (ATU)</td>
</tr>
<tr>
<td>H2</td>
<td>Perceived ease of use (PEOU)</td>
<td>Attitude towards usage (ATU)</td>
</tr>
<tr>
<td>H3</td>
<td>Perceived ease of use (PEOU)</td>
<td>Perceived usefulness (PU)</td>
</tr>
<tr>
<td>H4</td>
<td>Attitudes towards usage (ATU)</td>
<td>Behavioral intention to use the iPad (BIU)</td>
</tr>
</tbody>
</table>

H1: Perceived usefulness (PU) of the iPad will have a positive effect on attitude towards usage (ATU) the iPad.

H2: Perceived ease of use (PEOU) of the iPad will have a positive effect on attitude towards usage (ATU) the iPad.

H3: Perceived ease of use (PEOU) of the iPad will have a significant effect on perceived usefulness (PU) of the iPad.

H4: Attitude towards usage (ATU) the iPad will have a significant influence on users’ behavioral intention to use (BIU) the iPad.
Chapter 3

Results and Discussion

The process of analysis and testing followed the intent of this study. This study deployed a structural equation modeling approach to represent the casual relationships among the model factors: perceived usefulness and perceived ease of use of an iPad, attitude towards usage an iPad, and behavioral intention to use the iPad system. Consequently, a multiple regression analysis was conducted to examine the effect size and significance of the hypothesized causal relations between the independent variables of this study (PU, PEOU, ATU) and the dependent variable (BIU) as illustrated in Figure 2.

Also, validity and reliability tests were completed before testing the proposed hypotheses. The validity test that was completed to check the construct validity of the items used using the factor analysis test as a measure and descriptive statistics (see Tables 7, 8). The reliability test completed was to evaluate the internal consistency of the items used in the instrument using Cronbach’s alpha as a measure (see Table 9).

![Figure 2: Research model path coefficient results](image)

H1: $\beta = .772; R^2 = .521$

H2: $\beta = .636; R^2 = .405$

H3: $\beta = .768; R^2 = .590$

H4: $\beta = .418; R^2 = .174$
Validity Check

To examine the validity of the items included in the instrument of this study, different statistical techniques employed, including descriptive statistics and factor analysis test.

Descriptive Statistics

The descriptive statistics of the four factors: PU, PEOU, ATU, and BIU are illustrated in Table 7. As shown, all means are above the average 3.00 with a narrow spread of the data around the mean.

Table 7: Summary of means and standard deviations (N=22)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Questions</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU</td>
<td>Q1.</td>
<td>5.18</td>
<td>1.332</td>
</tr>
<tr>
<td></td>
<td>Q2.</td>
<td>5.86</td>
<td>1.082</td>
</tr>
<tr>
<td></td>
<td>Q3.</td>
<td>6.50</td>
<td>.740</td>
</tr>
<tr>
<td></td>
<td>Q6.</td>
<td>4.45</td>
<td>1.262</td>
</tr>
<tr>
<td></td>
<td>Q7.</td>
<td>5.05</td>
<td>1.090</td>
</tr>
<tr>
<td></td>
<td>Q8.</td>
<td>4.32</td>
<td>1.249</td>
</tr>
<tr>
<td></td>
<td>Q9.</td>
<td>5.77</td>
<td>.922</td>
</tr>
<tr>
<td></td>
<td>Q10.</td>
<td>4.95</td>
<td>1.214</td>
</tr>
<tr>
<td></td>
<td>Q11.</td>
<td>4.91</td>
<td>1.411</td>
</tr>
<tr>
<td></td>
<td>Q12.</td>
<td>5.09</td>
<td>1.109</td>
</tr>
<tr>
<td>PEOU</td>
<td>Q4.</td>
<td>5.18</td>
<td>1.332</td>
</tr>
<tr>
<td></td>
<td>Q5.</td>
<td>4.86</td>
<td>1.246</td>
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<tr>
<td></td>
<td>Q13.</td>
<td>5.86</td>
<td>1.457</td>
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<tr>
<td></td>
<td>Q14.</td>
<td>6.27</td>
<td>.935</td>
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<td></td>
<td>Q15.</td>
<td>4.36</td>
<td>2.013</td>
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<tr>
<td></td>
<td>Q16.</td>
<td>5.23</td>
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<tr>
<td></td>
<td>Q17.</td>
<td>6.27</td>
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</tr>
<tr>
<td></td>
<td>Q18.</td>
<td>6.14</td>
<td>1.207</td>
</tr>
<tr>
<td>ATU</td>
<td>Q23.</td>
<td>5.50</td>
<td>1.472</td>
</tr>
<tr>
<td></td>
<td>Q24.</td>
<td>5.59</td>
<td>1.333</td>
</tr>
<tr>
<td></td>
<td>Q25.</td>
<td>5.59</td>
<td>.854</td>
</tr>
<tr>
<td></td>
<td>Q26.</td>
<td>5.95</td>
<td>1.430</td>
</tr>
<tr>
<td></td>
<td>Q28.</td>
<td>5.41</td>
<td>1.709</td>
</tr>
<tr>
<td>BIU</td>
<td>Q19.</td>
<td>5.55</td>
<td>1.535</td>
</tr>
<tr>
<td></td>
<td>Q20.</td>
<td>5.14</td>
<td>1.670</td>
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<tr>
<td></td>
<td>Q21.</td>
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<td>1.790</td>
</tr>
<tr>
<td></td>
<td>Q22.</td>
<td>4.86</td>
<td>1.612</td>
</tr>
</tbody>
</table>
Factor Analysis

To test the construct validity of items in the instrument, a factor analysis was performed (see Table 8). As shown in Table 8, the values of the factor loading of the items used in the survey indicate that items used are valid to measure the students’ PU, PEOU, ATU, and BIU the iPad in their language learning courses.

Table 8: Results of component principle analysis.

<table>
<thead>
<tr>
<th>Item no.</th>
<th>PU</th>
<th>PEOU</th>
<th>ATU</th>
<th>BIU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.694</td>
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<td>2</td>
<td>.429</td>
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<td>3</td>
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<td>6</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>.496</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>.778</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
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<tr>
<td>5</td>
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<tr>
<td>13</td>
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<td>.243</td>
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<tr>
<td>17</td>
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<td>.473</td>
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<tr>
<td>18</td>
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<td></td>
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<td>23</td>
<td></td>
<td></td>
<td>.891</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
<td>.901</td>
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<td>25</td>
<td></td>
<td></td>
<td>.823</td>
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<td>26</td>
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<td></td>
<td>.849</td>
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<td>28</td>
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<td></td>
<td>.874</td>
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<td>.835</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td>.693</td>
</tr>
<tr>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td>.642</td>
</tr>
</tbody>
</table>
Internal Consistency Reliability  Internal consistency reliability refers to the general agreement among a group of items that measure/represent a given construct. This agreement usually is expressed in terms of correlation among the items in the scale that represent each construct. Therefore, a Cronbach’s alpha reliability test was used to test the reliability of the items used to measure the four factors of TAM (PU, PEOU, ATU, and BIU). The results, as summarized in Table 9, indicated that the items employed to measure the four factors of TAM were reliable as $\alpha$ values were greater than .70.

Table 9: Results of Cronbach’s alpha test.

<table>
<thead>
<tr>
<th>Factor</th>
<th>No. of Items</th>
<th>Alpha ($\alpha$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PU</td>
<td>10</td>
<td>.798</td>
</tr>
<tr>
<td>PEOU</td>
<td>8</td>
<td>.726</td>
</tr>
<tr>
<td>ATU</td>
<td>5</td>
<td>.918</td>
</tr>
<tr>
<td>BIU</td>
<td>5</td>
<td>.740</td>
</tr>
</tbody>
</table>

Hypotheses Testing

The first test completed was the Shapiro-Wilk test to check the normality of the collected data in order to decide the appropriate statistical test used to test the proposed hypotheses. The result of the Shapiro-Wilk test indicated at 95% confidence level that the data came from a normal distribution; the $p$-value of PU, PEOU, ATU, BIU was .133, .099, .110, .082 respectively which all are greater than .05. Consequently, a multiple regression analysis was conducted to complete the hypotheses testing as discussed below. The casual relationships between the four factors of TAM, which constitute the
independent and dependent variables of the hypotheses were evaluated through the values of the correlation coefficients, Beta $\beta$, R Square ($R^2$) values, and the significance statistics of those relationships. Note that $\beta$ shows the direct measure of the independent variable on the dependent variable, while $R^2$ shows how much of the effect on the dependent variable is contributed by independent variable.

Table 10: Results of hypotheses testing.

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Casual Path</th>
<th>Sig. $p &lt; .05$</th>
<th>Beta ($\beta$)</th>
<th>R Square ($R^2$)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>PU $\rightarrow$ ATU</td>
<td>.000</td>
<td>.772</td>
<td>.521</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>PEOU $\rightarrow$ ATU</td>
<td>.001</td>
<td>.636</td>
<td>.405</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>PEOU $\rightarrow$ PU</td>
<td>.000</td>
<td>.768</td>
<td>.590</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>ATU $\rightarrow$ BIU</td>
<td>.000</td>
<td>.418</td>
<td>.174</td>
<td>Supported</td>
</tr>
</tbody>
</table>

H1: Perceived usefulness (PU) of the iPad will have a positive effect on attitude towards usage (ATU) of the iPad.

Based on the statistical results of testing H1, the $p$-value for the regression analysis performed was .000, indicating a significant result for the independent variable, PU on ATU. The correlation coefficient, $\beta$ was .772 with $R^2 = .521$ (Table 4).

H2: Perceived ease of use (PEOU) of the iPad will have a positive effect on attitude towards usage (ATU) of the iPad.

The $p$-value for the regression analysis performed was .001, indicating a significant result for the independent variable, PEOU on ATU. The correlation coefficient, $\beta$ was .636 with $R^2 = .405$ (Table 10).
H3: Perceived ease of use (PEOU) of the iPad will have a significant effect on perceived usefulness (PU) of the iPad.

The $p$-value for the regression analysis performed was .000, indicating significant result for the independent variable, PEOU on PU. The correlation coefficient, $\beta$ was .768 with $R^2 = .590$ (Table 10).

H4: Attitude towards usage (ATU) of the iPad will have a significant influence on users’ behavioral intention to use (BIU) the iPad.

The $p$-value for the regression analysis performed was .000, indicating a significant statistic for the independent variable, ATU on BIU. The correlation coefficient, $\beta$ was .418 with $R^2 = .174$ (Table 10).

Beyond the scope of the hypotheses, a further testing was performed to evaluate whether or not the students’ experience of using the iPad prior to taking their language learning courses will affect their behavioral intention to use the iPad. To accomplish this evaluation, an independent samples t-test was completed to compare the responses between the two groups. Based on results of the Independent Samples t-Test, the significance (2-tailed) $p$-value = .920 which is greater than .05. Therefore, there is no significant difference between the responses of the two groups. In other words, there is no significant difference between the students’ responses for those who have prior experience using iPad, and those who do not have prior experience using iPad.

Discussion

The purpose of this study was to examine the language learning students’ behavioral intention to use iPad in their language learning courses. Their acceptance to use the iPad was based on their conceptual belief that using the iPad in their courses is
easy, useful, and relates to learning their material. The results of testing the proposed hypothesis indicate their statistical significance and size effects of independent variables on dependent variables as presented in Table 10. Overall, the results suggest that students’ perceptions of the iPad usefulness and ease of use have direct effects on their attitude towards using the iPad, which directly impact the students’ behavioral intention to use the iPad in their language courses and other contexts. In general, the iPad was perceived useful and easy to use in language learning courses.

First, students’ perceived usefulness of the iPad (PU) in their courses shows a significant effect on their attitude towards using the iPad (ATU) as $p = .000$ at 95 percent confidence interval. In addition, the standardized Beta of PU of .772 shows a strong relation between the students’ perceived usefulness of the iPad in their language learning courses and their attitude towards using the iPad. In other words, if the students’ perception of the usefulness of the iPad increases by 1, their attitude towards using the iPad will increase by 77 percent. This shows a strong correlation between the students’ perception of the iPad usefulness and their attitude towards using it in their language courses. The β value is also positive so it proves that, as students perceive the use of the iPad useful in their language courses, their attitude towards using it increases. Furthermore, the $R^2$ figure of .521 indicates how much variance in the students’ attitude of using iPad is explained by their perceived usefulness of the iPad, which means that slightly over 50 percent of the variance in the ATU variable is contributed by the students’ perceived usefulness of the iPad. Accordingly, H1 is supported.

Second, H2 is also supported; the students’ perceived ease of use of the iPad in their language courses demonstrates a significant effect on their attitude towards using
the iPad since $p = .001$ at 95 percent confidence interval. The standardized Beta of PEOU is equal to .636, which shows a strong and positive relationship between the students’ PEOU and their ATU of the iPad. Meaning, as students perceive the iPad easy to use in their language courses, their attitude towards using it increases. So, if the students’ perceived ease of use of the iPad increases by 1, their attitude towards using it increases by 63 percent. This shows a strong correlation between the students’ perception of the iPad ease of use and their attitude towards using it in their language courses. Furthermore, the $R^2 = .405$, which indicates how much variance in the students’ attitude towards iPad usage is explained by their PEOU of the iPad; slightly over 40 percent of the change in the students’ attitude towards using the iPad in their language courses is contributed by the students’ perceived ease of use of the iPad. Accordingly, H2 is supported.

Third, the statistical results of testing H3 supports the notion that students’ perceived ease of use of the iPad influence their perception of the iPad usefulness. The significance level was equal to .000. Thus, the relation between the students’ perceived ease of use and their perceived usefulness of the iPad is statistically significant. The standardized Beta of PEOU on PU is equal to .768, which shows a strong and positive correlation between the students’ PEOU and their PU of the iPad. Meaning, if the students’ perceived ease of use of the iPad increases by 1, their perceived usefulness increases by 76 percent., which indicates a strong correlation between the students’ perception of the iPad usefulness and their perception of the iPad ease of use. The students’ implied the iPad is useful when they found it easy to use. In addition, the $R^2 = .590$, which indicates how much variance in the students’ perceived usefulness of the
iPad is explained by their perceived ease of use of the iPad; about 60 percent of the change in the students’ perceived usefulness of the iPad is contributed by their perceived ease of use of the iPad. The students implied that the iPad is useful when they found it easy to use.

Fourth, the results showed that the students’ attitude toward using the iPad promotes their behavioral intention to use the iPad in their language learning courses. The relationship between the students’ ATU and their BIU of the iPad is positive and statistically significant. ($\beta = .418; \text{R Square} = .174; p = .000$). If the students’ attitude towards using the iPad increases by 1, their behavioral intention to use it also increases by 40 percent, which suggests a correlation between the students’ attitude towards using the iPad and their behavioral intention to use it in the future. Consequently, H4 is supported. Yet, only a little over 17% of the change in the students’ behavioral intention to use the iPad is contributed to their attitude towards using iPad. This is a small effect of their attitude toward using the iPad on their intention to use it. This could relate to the variation in responses for items 19 and 20 in the survey questionnaire (see Appendix A). Those items were about how frequent the students’ use the iPad during their class times and for their course work. Some students were not sure about their feelings towards those items so they selected “neutral” while some others selected “strongly disagree, moderately disagree, and slightly disagree”. This may indicate that the teachers’ usage of the iPad is various from one teacher to another, which influenced the students’ rank to those items. In turn, it influenced the size effect of those items on the effect size of the students’ BIU in general. Additionally, there are other factors that contribute to the
students’ intention to use the iPad more than their pleasant attitude towards using it that are not included in TAM.

Even though there were strong relationships between the students’ perceived usefulness and their perceived ease of use of the iPad and their attitude towards iPad usage, the students’ perceived usefulness is a stronger predictor of the students’ attitude towards using the iPad than their perceived ease of use as illustrated by their related values of $\beta$ and $R$ Square: $PU (\beta = .772; R$ Square $= .591) > PEOU (\beta = .636; R$ Square $= .405)$.

The findings of this study validate the theoretical framework of TAM; there is a strong correlation relationship among the variables of TAM: $PU, PEOU, ATU$ when predicting the students’ acceptance of using the iPad in their language learning courses through their behavioral intention to use the iPad. The students’ perceived usefulness and perceived ease of use are significant when establishing the students’ attitude towards the iPad, which in turn predict the students’ behavioral intention to use the iPad in the future or in any other contexts. This causal relationship has previously demonstrated in various educational contexts (Joo & Sang, 2013; Schoonenboom, 2014).

After testing the proposed hypothesis of this study, I was also interested in comparing between the students who had experience using an iPad before their enrollment in their language learning courses and those who did not have such experience, and their attitude toward using the iPad. Consequently, an independent samples $t$-test was completed. The result did not indicate a significant difference between the attitude of the students’ who had previous experience of using the iPad before they used it in their language learning courses and those who did not; $p$-value $= .920$. 
Accordingly, one can deduce that the students’ pleasant attitude towards using the iPad is not affected whether or not they used it before they began their language learning classes.

Also, this study did not find a significant difference between the perceived ease of use of the iPad of the students’ who had previous experience of using the iPad before they used it in their language learning courses and those who did not; \( p \)-value = .465. As a result, one can infer that the iPad can be perceived easy to use if the students are not familiar with using an iPad.

Additionally, students wrote comments that gave further insights about their experience using the iPad in their language courses that are worth being mentioned. One student felt that the iPad does not enhance his speaking skills and he prefers to orally communicate with native speakers of English, as the student said, “Speaking will improve if we talk to the native language person not with the iPad”, which contradicts the finding of Lys’s study (2013). This note reflects on how the iPad might have been used in the related speaking and listening courses. It appears that certain features of the iPad are not utilized to better the students’ speaking skills. For example, instead of using conversation English apps, language teachers can use FaceTime for the students to hold live conversations with native English speakers. In addition, one student felt that typing on the iPad was not easy, as he commented, “I prefer using the laptop more because Ipad don’t have a keyboard which just makes the input so hard”, which ties in with the finding of Yang and Xie (2013). One more student prefers to use a laptop more than an iPad; “if let me choose, I would like laptop more. It’s easy more to use” the student wrote. On the other hand, a student felt that using the iPad is cost-effective as the student saved the money spent on purchasing books, which indicates that the existence of other factors that
may affect the students’ attitudes towards using the iPad, besides their perceived usefulness and ease of use of the iPad. The student noted, “Using Ipad study in ALI can save money. In my first ALI semester, ALI did not decide to use Ipad. I paid many money on books. When I used Ipad, I did not to worry about books”.

**Implications**

The results of this study provide an insight of some reasons behind students’ rejection or acceptance of the iPad in their courses of language learning. By using TAM, the students’ acceptance of the iPad was predicted by measuring their behavioral intentions to use the iPad in terms of measuring their attitudes, perceived usefulness and perceived ease of use.

At the practical level, the outcomes of this study can be a step forward addressing the contribution that the iPad, iBooks and iTunes U apps, can add to the learning experience of language learners. Glancing back at the items used in the questionnaire to measure the students’ perceived usefulness of the iPad, students felt that iPad improved their language skills, and helped them in managing the materials and homework assignments of their language courses without effort (Manuguerra & Petocz, 2011; Henderson & Yeow, 2012), which made most of them feel that the use of the iPad improved their overall performance in their reading, writing, speaking, and listening courses. Finding out how the students felt about the iPad can encourage language teachers to explore the features of the iPad that improve the efficiency and effectiveness of language learning and teaching and apply them to confirm their contribution.
Limitations and Future Research

Despite the discussed contribution of this study, the results should be interpreted with caution due to the fact that the results were based on students’ perceptions only. The responses of the students were solicited through a survey questionnaire that is self-reporting, so the students’ own interests, attitudes, and interpretation of the survey items can affect the students’ perceptions. Therefore, further research to examine the students’ iPad usage against their actual performance to check their actual improvement is considered necessary to confirm the iPad’s significance in improving language skills. This can be achieved in different ways; for example, a longitudinal study design or control-experiment group design to better verify the usefulness and ease of use of the iPad.

This study employed TAM, which evaluated the technology at a general level. To get better insights into the contribution of the iPad, other studies that examine the usefulness and ease of use of the iPad at a task level should be considered. This also can identify the iPad aspects that can be best used to better the learning experience of language learners in terms of cognition efficiency (better comprehension) and autonomy. For example, a study at a task-level can be about using FaceTime to engage language learners into a real-life authentic conversation to enhance the learners’ native-like pronouncing and/or speaking and listening skills. Then, evaluate the students’ intention whether to incorporate or not incorporate this task into their language learning tasks.

Further studies to evaluate the perception of non-traditional language learners especially for those who are elderly or have limited technology skills can be useful. Such
studies can help validate the simplicity and effectiveness of the iPad in terms of ease of use and usefulness.

Teachers’ perception of using technology in classrooms can highly impact the students’ attitudes towards using technology and their behavioral intention to use it. The teachers’ perceptions can be tested as an external factor to the current factors of TAM (PU & PEOU). Thus, it is highly encouraged to conduct a study for this purpose.

Despite the contribution of this study, the results of this study are limited in generalizability to participants and tasks similar to those used in this study. This study focused on typical traditional college students who need to take preparatory English courses before their admission to the academic courses. The focus of the iPad use in the related courses is on managing the materials of the language learning courses and homework assignments.

**Concluding Remarks**

Language learning is a challenging task that requires a lot of cognitive effort and time from students. Therefore, teachers and administrators bear the responsibility of applying effective teaching and learning methodologies to enhance the learning experience of language learners. One of which is the selection of the appropriate technology to be deployed seamlessly into the learning-teaching process of language.

For a better success of technology integration, teachers need to select the technology that meets the students’ perceptions, and needs that also serves the goal of the course. Accordingly, this research shed light on the students’ perceptions of using the iPad in their language learning courses. Based on the results of this study, students felt that the iPad was useful and easy to use in managing the materials and homework
assignments of their language courses, resulting in an overall improvement in their language skills.

Moreover, this research highlights the realistic role of technology in language learning, and how it highly coincides with the learning process in the human’s brain. Many studies included in this research demonstrate the positive impact of technology on language learning. More importantly, technology provides a source of multi-sensory input of language that is required for learning to occur since learning involves changes in the synaptic connections and formation of associations among co-occurring neural events when learners are exposed to any sensory input of language. Hence, technology influences the students’ ability to learn to their full potential.
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Appendix A

Sample of Research Related Documents

Research Consent Form

ADULT RESEARCH SUBJECT - INFORMED CONSENT FORM
(The Significance of iPad in Language Learning)

Principal Investigator:  Prof. Douglas W. Coleman (419-530-2318—English Dept.)
Student Investigator: Ghada Itayem, (419) 490-3582.

Purpose: You are invited to participate in the research project entitled, “The Significance of Using Technology, iPad, in Language Learning,” which is being conducted at the University of Toledo under the direction of Prof. Douglas W. Coleman and Ghada Itayem. The purpose of this study is to examine the students’ perceived usefulness of the iPad use in language learning through the examination of the students’ attitude toward their current use of this technology and their intention to use it in the future.

Description of Procedures: This research study will take place in a classroom at the University of Toledo (UT) in Toledo, Ohio. You will be asked to complete a survey in which you will circle the number that best represents how you feel about using the iPad in your courses in the American Language Institute (ALI). You will rate each item on 1-7 response scale where 1= strongly disagree, 2= moderately disagree, 3= slightly disagree, 4= neutral, 5= slightly agree, 6= moderately agree, and 7= strongly agree. The entire preparation and completion of the survey will take approximately 25 minutes.

After you have completed your participation, the research team will debrief you about the data, theory and research area under study and answer any questions you may have about the research.
**Potential Risks:** There are minimal risks to participation in this study, including loss of confidentiality. If for any reason participating in this study might cause you to feel upset or anxious, you may stop at any time.

**Potential Benefits:** The only direct benefit to you if you participate in this research may be that you will learn about survey and how you complete one to rate your opinion, using Likert scale, and may learn more about the advantages or disadvantages of using the iPad in your courses. Others may benefit by learning about the results of this research.

**Confidentiality:** The researchers will make every effort to prevent anyone who is not on the research team from knowing that you provided this information, or what that information is. The consent forms with signatures will be kept separate from responses, which will not include names and which will be presented to others only when combined with other responses. Although we will make every effort to protect your confidentiality, there is a low risk that this might be breached.

**Voluntary Participation:** Your refusal to participate in this study will involve no penalty or loss of benefits to which you are otherwise entitled and will not affect your relationship with The University of Toledo or any of your classes in the ALI. Therefore, your decision to participate, or not participate, in this research project will have no effect on your course grade in the ALI classes. You also may discontinue participation at any time without any penalty or loss of benefits.

**Contact Information:** Before you decide to accept this invitation to take part in this study, you may ask any questions that you might have. If you have any questions at any time before, during or after your participation you should contact a member of the research team Douglas Coleman, Principal Investigator, (419) 530-2318, and Ghada Itayem, Student Investigators, (419) 490-3582

If you have questions beyond those answered by the research team or your rights as a research subject or research-related injuries, the Chairperson of the SBE Institutional Review Board may be contacted through the Office of Research on the main campus at (419) 530-2844.

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.
SIGNATURE SECTION – Please read carefully

You are making a decision whether or not to participate in this research study. Your signature indicates that you are 18 or older, have read the information provided above, you have had all your questions answered, and you have decided to take part in this research.

The date you sign this document to enroll in this study, that is, today's date must fall between the dates indicated at the bottom of the page.

<table>
<thead>
<tr>
<th>Name of Subject (please print)</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Person Obtaining Consent</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

This Adult Research Informed Consent document has been reviewed and approved by the University of Toledo Social, Behavioral and Educational IRB for the period of time specified in the box below.

Approved Number of Subjects: 100
Demographics of Student Participants

1. Sex:   Male   Female

2. Age:   18-24   25-34   35-44   45 or older

3. Country of birth

4. Major

5. I have an experience using the iPad in my English reading, writing, speaking and listening courses for 6 or more weeks.
   □ Yes   □ No

6. I used the iPad before I took my ESL courses.
   □ Yes   □ No
Please circle the number below that best represents how you feel about using the iPad in your language learning courses. Rate each item on 1-7 response scale where:

### Using the iPad in my language learning courses:

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Neutral</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Improved my reading</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<td>7</td>
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<td>2. Helped me take control over the homework assignments of my courses</td>
<td>1</td>
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<td>3. Helped me quickly view the homework assignments of my courses</td>
<td>1</td>
<td>2</td>
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<td></td>
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<td>Strongly Disagree</td>
<td>Moderately Disagree</td>
<td>Slightly Disagree</td>
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<td>Slightly Agree</td>
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<td>4. Made studying reading and writing easier</td>
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<tr>
<td>5. Made studying speaking and listening easier</td>
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<td>6</td>
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<td>6. Improved my writing</td>
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<td>6</td>
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<tr>
<td>7. Improved my listening</td>
<td></td>
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<td>2</td>
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<td>6</td>
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<tr>
<td>8. Improved my speaking</td>
<td></td>
<td>1</td>
<td>2</td>
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<td>6</td>
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<tr>
<td>9. Was helpful to study the reading and writing materials</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>10. Was helpful to study the speaking and listening materials</td>
<td></td>
<td>1</td>
<td>2</td>
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<tr>
<td>11. Improved my overall performance in the reading and writing classes</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>12. Improved my overall performance in the listening and speaking classes</td>
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<tr>
<td>13. I reviewed the homework assignments with no trouble</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>14. It was easy for me to remember how to find the materials for my courses</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>15. I found it not difficult to study the reading and writing materials</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>16. I found it not difficult to study the listening and speaking materials</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>17. It was easy to download the books for my courses</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>18. Overall, the iPad was easy to use in my courses</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>19. I frequently used the iPad during class time</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
<td>3</td>
<td>Neutral</td>
</tr>
<tr>
<td>20. I used the iPad for my coursework most of the time</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>Moderately Disagree</td>
<td>2</td>
<td>Slightly Disagree</td>
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<td>Neutral</td>
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<td></td>
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<td>21. I think I will use the iPad for my studies in the future</td>
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<tr>
<td>22. I think I will use the iPad to search for educational resources in the future</td>
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<tr>
<td>23. I was happy to use the iPad for learning</td>
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<tr>
<td>24. Buying the iPad gives me many benefits</td>
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<tr>
<td>25. Using the iPad in the classes provided me a lot of fun</td>
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<tr>
<td>26. I liked the idea of using the iPad to view the homework assignments of my language courses</td>
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<tr>
<td>27. I am using the iPad in different context after I completed all of my language learning courses</td>
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28. It was a good idea to use the iPad in the language learning classes

Comments and/or Suggestion