From Literacy to Multi-literacies: Thai ESL Graduate Students' Perception of Learning English Using Digital Technology in the U.S.

Nuwee Chomphuchart
University of the Thai Chamber of Commerce, Thailand
iamnuwee@hotmail.com

Chinwe Ikpeze
St. John Fisher College, U.S.A.
Cikpeze@sifc.edu

Abstract
The purpose of this study was to examine perceptions of Thai ESL graduate students who studied in the U.S., when learning the English language through digital technologies. The interviewed participants were three male and three female students from two State universities in the Northeast and Southwest of U.S.A Grounded in multi-literacies framework, the study is a qualitative study. Major data sources included interviews and observations. Findings demonstrated that overall the participants had positive attitudes towards the use of digital technologies and ICTs in general. The positive attitudes included the convenience of ICTs, the self-directed learning, the motivation to learn, and genuine context. However, the challenges the students faced included less face-to-face interactions, eyestrain, Internet dependency, the teachers' role, Internet access ability, mismatches between in-and-out of class use of ICTs, and differences of the educational philosophies

Keywords: ESL graduate students, digital technologies, ICTs, self-directed learning

1. Introduction

In the era of technological revolution, societies are becoming more and more global and networked (Westby, 2010). As a result of the Information and Communication Technologies (ICTs), educators, researchers and teachers alike are required to adopt new approaches to teaching so that they can prepare their students to take an effective part in the new literacy environments. A major aspect of this transition is the combination of the multiple modes of communication including printed, digital, and visual images (Jewitt, 2008).

Students in the 21st century are faced with different difficulties in relation to linguistics, culture, and school contexts. Therefore, teaching English in English as a second (ESL) or foreign language (EFL) classrooms is evolving dynamically due to the multiplicity of communication channels. In order to come to grips with these challenges, students need to process new skills and strategies to understand literacies used in constructing meaning from multiple modes of communication. Similarly, teachers are required to be exposed to a variety of teaching methods and techniques in order to appropriately deal with different demands by the students.

Without a doubt, ICTs have grown to be essential in our English classroom. ICTs are also significant in both teachers and students' lives. Despite the expansion of ICT use, the challenges and problems of ESL/EFL students in relation of using ICTs in learning English cannot be neglected (De Izquierdo & Reyes, 2009). Previous studies have examined the role of ICTs in

English instruction, and some studies focus on the beliefs from the teachers' point of view (Hismanoglu, 2012; Li & Walsh, 2010; Sheard & Carbone, 2008; Zare-ee, 2011). Hismanoglu (2012) for example, investigated pre-service EFL teachers' attitudes toward ICT integration into language class and found that after taking the ICT training courses, the participants exhibited positive attitudes towards ICT integration into their language teaching, while Zare-ee (2011) explored university teachers' views on the use of ICTs in teaching and found that they strongly agreed with the educational benefits of ICTs but they reported infrequent use of ICT in their classroom. However, none of the previous studies have examined the perception of Thai graduate students' attitude toward learning English through using digital technology. Therefore, the present study addresses ICTs and examines the students' perception of their learning English using digital technology contexts in and out of the classroom.

2. Theoretical Framework

In order to understand how students' perception relates to theory on digital technology and English language teaching, a brief overview of variables involved in English instruction is offered. In this section, literacy, multiliteracies, digital technology, related research on multiliteracies and students' perception, and Asian educational context will be discussed.

Literacy

The concept of literacy and the text itself in the last twenty years has offered a challenge to teachers and students. Gee (1996) defined literacy as a dynamic concept which changes over time and space. Nowadays, literacy has been increasingly pluralized and multiplied in school discourses. The term literacy was redefined as a result of the influence of the New Literacies Studies. Within the New Literacies Studies, there is increasing acknowledgment of the multifaceted interface between local and global literacies (Brant & Clinton, 2006).

Despite its various definitions, the researcher believes that in the 21st century, literacy is no longer just the ability to read and write in the traditional way; it is now viewed as the ability to understand the different textual forms associated with varied domains such as the Internet, videogames, visual images, graphics, and layouts.

Multi-literacies

The shift in literacy practice resulting from technological changes implies a need for new approaches to literacy pedagogy (Miller & Borawicz, 2006; New London Group, 1996). Multiliteracies refer to skills that go beyond reading and writing. Multiliteracies include printed and non-printed materials, a competence in the mathematical skills, search strategies, digital technologies and critical thinking skills, cultural awareness and understanding of diverse communities in the world (Pacino & Noftle, 2011). Multiliteracies also includes being cognitively and socially literate with paper and digital texts. A multiliterate person should be able to critically evaluate, analyze and understand a wide array of text forms and technologies in a variety of contexts (Anstey & Bull, 2006). Multiliteracies allow students to use various mediums or multimodal layers in learning such as print, audio or spatial. Therefore, it is the teacher's role to engage students with the tools and technology that they are already familiar with (Pullen & Cole, 2010).

Digital Technology

Digital technology is beneficial in schools as it offers a global database of authentic materials that can enhance language learning and teaching. Digital technology such as the Internet offers learning and teaching resources (Son, 2007). It provides an extensive range of authentic materials as well as a more learner-centered medium of instruction that is able to encourage a variety of classroom-based activities. Apart from Son (2007), Bao (2006) posited that digital technology can help improve ESL/EFL students' listening, speaking, reading and writing skills.

There has been a great deal of research conducted examining various multiliteracies and English learning. Hismanoglu (2012), for example, explored prospective EFL teachers' ICT attitudes before and after ICT training in a university in Cyprus. Results showed that the ICT training is connected with the teachers' positive attitudes towards ICT integration into language instruction. The researcher suggested that problems causing their negative attitudes should be explored in depth by employing observational methods properly and extensively.

Bakar, Noor, Azman, Nor & Hamat (2011) explored the effectiveness and usefulness of online reading tools (Intelligence English Language Literacy System, i-ELLS) through the students' evaluation of an online reading system. Bakar *et al.* (2011) suggested that learning without a purpose, even though with high-tech learning tools will be disadvantageous in the students' learning process.

Unlike the previous studies that reported the use of ICTs in classes, Aydin (2011) tried to find out whether Turkish EFL students have anxiety while using internet in-and-out of class. The authors suggested that female participants felt more uncomfortable when they used the internet than males did. Also, internet connection ownership helped make the participants more comfortable with the ICTs use.

Hussain, Niwaz, Zaman, Dahar & Akhtar (2010) explored the effectiveness of a technology-based learning environment on Pakistani EFL students' achievement in learning English. Results from the pre-and-post tests indicated that the students in the experimental group performed better and it helped the students to develop their abilities in knowledge, comprehension and application.

With Taiwanese students and Taiwanese context, Tseng (2010) investigated how online reading affected EFL students' reading comprehension. The findings showed that factors that may have influenced students' performances when reading hypertext included eyestrain, background colors of web pages, and skipping lines. Tseng also pointed out that teachers should teach students how to read hypertext and further research is required to determine if the eyestrain comes from reading text or whether it is because students just do not like to read English articles online.

In this section, the researcher briefly reviews related research on multiliteracies and English language learning. The Asian educational context will be discussed in the next part.

Asian Educational Context

Previous studies suggested that Asian international students are more passive, obedient and unreflective learners as a result of teacher-centered, grammar-translation teaching approaches (Badke, 2011; Liu & Littlewood, 1997; Pikkert & Foster, 1996: Zhenhui, 2001). For example, Japanese and Korean students are usually quiet and introverted in language classrooms. That is, they are not comfortable with explicit displays of opinions. In addition, Badke (2011) noted that Asian students are computer literate but it co exists with the same memorization-based pattern of educating students. While in the U.S, the ability to memorize is not considered as the most important skill. Instead, critical thinking is the highest goal in the educational process.

In short, Badke (2011) concluded that technology and language are not the main problems but the conflict in educational philosophy between their home countries and that of U.S. He recommended that American schools need to start information literacy instruction by explaining the point − not to summarize what we already know, but to determine, discover, evaluate, and use information to address an issue.

Therefore, the purpose of the study was to explore how Thai ESL graduate students who enrolled in two public universities in the U.S perceived of their learning English through using digital technology. It also sought to answer whether these students faced any challenges while learning English using digital technology both in and out of classroom contexts. There are two main research questions:
1. What are the Thai graduate students' general perceptions of learning English through using digital technology?
2. What are the challenges (if any) of learning English language through using digital technology?

3. Methodology

In-depth interviews and observations served as the major sources of data collection. The data obtained was analyzed and interpreted to examine the students' perceptions.
The interview consisted of 2 sections:
1. Participants background information
2. Questions on the participants' beliefs, attitudes toward their learning using digital technology as well as the participants' challenges when using digital technology in and out of classrooms.

Participants

The participants of this study were three male and three female Thai graduate students who enrolled as full-time students at two different public universities in the Northeast and Southwest, U.S.A. These include three doctoral candidates and three master's candidates. The participants' majors included Science, Engineering, Business Administration and Economics.

The investigator sent emails asking all Thai graduate students who studied in the two universities to take part in the study. Results relating to computer background showed that the participants had access to the computer and the Internet, either at home or at school. The majority of the participants used the Internet approximately 2- 3 hours daily. All of them had more than 10

years computer experiences and all of them called themselves "computer literate". Also, the majority of the participants had more than 15 years of learning English.

The interviewed participants were selected based on a purposeful sampling of the maximum variation (Merriam 1998). That is, both individual factors and environmental factors were taken into consideration. The selection criteria were based on characteristics that have been found to play a role in English language learning namely: academic major, level of study (MA or Ph.D.), gender, and age.

4. Data Collection and Analysis

The researcher interviewed each participant individually during the study. Each interview lasted about thirty minutes and all interviews were audio-taped and video-taped. Also, after each interview, all participants were asked to log on to the Internet and navigate through their favorite websites for learning English for about 15-20 minutes. The purpose of the website navigation was to observe and cross-check the participants' responses to the interviews and to seek authentic information concerning their English learning experiences.

During the interviews, the participants were asked general questions concerning their perceptions of learning English using ICTs. Interviews were conducted as semi-structured and in-depth interviews, in which the researcher used general questions as guidelines rather than specific questions. Questions were open-ended so that each participant could report their perception and their problems while learning English through using digital technology. All of the participants were asked to speak in English or in Thai or both during the interviews. After the interviews were conducted, data were then transcribed, categorized, analyzed, and interpreted. To ensure the anonymity of the participants, pseudonyms were used.

5. Results

All of the participants mentioned that they owned cell phones, lap-tops, and normally spent two to three hours online for personal and academic purposes. They also called themselves 'computer literate'. However, three out of six participants owned smart phones and iPads.

5.1 Research Question One: General Perceptions of ICTs

According to the research question, concerning attitudes towards learning English using digital technology, most interviewed participants agreed that technology-based learning helped them learn English faster and easier. They clearly stated that they read faster, had better listening skills, spoke and wrote more correctly. The themes emerged from the interviews are as follows:

The Convenience of ICT Use

Regarding convenience of ICT use, all six participants mentioned that with the Internet, their learning of English became easier and faster. For example, one male student from a state university in the South discussed his positive attitudes towards using technology in the classroom. He consistently indicated that technology can benefit his English learning as it saves time and effort in getting information. He added that:

Parin: One thing that I like about technology is that while my professor uses PowerPoint, he or she uses video clips to explain something that is difficult to explain

in words. When you see the video, you get it right away. In engineering field, it is helpful as you can see real pictures. Now, I'm logging on to Youtube.com. I want to show you how it works. I just type keywords such as thunders and lightning. See, when you look at the pictures, the video clips, it's clearer. So, technology can be helpful.

Apparently, the internet can serve as a visual aid for demonstration. It is a huge library for obtaining varied types of information. That is, technology can be used as a tool for research based learning. They emphasized the value of the internet for learning about current events and keeping up with real language.

Self-directed Learning

Most participants agreed that the technology provided students with valuable opportunities to practice and learn the language individually. That is, technology helps foster autonomous learning. For example, Lalida, a doctoral student from a university in the Northeast stated that:

Lalida: You can search for information from the Internet yourself. For example, I have a problem in terms of listening and speaking. So, I use the Internet to watch movies online to practice listening to the news such as CNN, and yahoo.com. I always log on to yahoo.com and search for news. For example, I look at the very first page of yahoo. OK, I will show you how. Now, I'm logging on to yahoo.com. This headline is interesting. It's about the (2011) Tsunami in Japan. Then, I double click and read the news. Also, I can practice listening from yahoo videos or reading from other online news. For reading, I can get new vocabulary.

This example demonstrates that ICT tools and other technological resources can give language learners the flexibility to select their own learning materials adapted to their distinct interests and capabilities.

The Motivation to Learn

It can be seen that the participants mentioned they wanted to learn English more because they were able to find unlimited information on the Internet and this generally affected the way they used the Internet. One interesting response is from Tipsuda, a female Master's student from a university in the Southwest mentioned that the Internet adds an element of interest and joy to the learning process. The following is her comments about the usefulness of practicing English on the Internet.

Tipsuda: there is one website, if you are about to take the GRE test, you can log on to freerice.com. It's the GRE verbal part, if you are right, they will donate rice to developing countries. So, you can make merit and the vocabulary is close to the GRE test. It's fun, I like it. Also, I love reading cartoons and Korean series, they come with English subtitles. So I can learn English though these series. You have to know what you are into. And you can use these as your own motivation to learn English. You can have fun watching the series and you can learn English at the same time. It's fun and it encourages you to learn more.

This example illustrates that the Internet offers an alternative way of learning English. It provides students with additional opportunities for drills and practice.

Authentic Context
The majority of the participants indicated that the Internet is a very useful tool to gain authentic use of English. Thongchai, a male student from a university in the Northeast, for example, learned new vocabulary that is used in the engineering field from the Internet. The following are his comments:

Thongchai: As an engineering student, you have to study and memorize technical terms, like engineering terms, when I come up with new vocabulary; I have to use the internet dictionary such as thefreedictionary.com for English search and Dict.Longdoo.com for Thai vocabulary.

In conclusion, the participants perceived digital technology as a positive tool for the benefit of their English learning, especially in the area of reading, writing, speaking, listening and vocabulary building.

Overall, all six participants mentioned that they had positive attitudes toward the use of digital technologies in the classroom. However, they stated that digital technologies somehow had some issues for ESL/EFL learners. Below are their challenges in learning English in relation to ICT use.

5.2 Research Question Two: Challenges of ICT Use
According to the second research question concerning the challenges of learning English using digital technology, the participants mentioned eight themes as follows:

Less Face-to-face Interaction
With respect of interaction, the participants drew attention to students' lack of face to face interaction as a result of the technology use. Tipsuda, a female student from a university in the Northeast gave an example of this by saying:
Tipsuda: I think with technology, you lack interaction with people. For example, instead of asking or consulting with your professor, you just log on to Google. See? No more human interaction.

The example reveals that ICT tools might create a divide among learners. That is, the Internet might be able to promote superficial communication, be a substitute for face-to-face social interaction, and lead to inaccurate learning.

Eyestrain
The majority of the participants also discussed the effect of the Internet use and eye fatigue. Purit, a male student from a university in the Northeast, expressed his negative attitude toward technology in terms of eye health as follows:

Purit: I prefer reading printed materials. I also use different techniques when reading online texts. I just don't like reading online texts but if I have to, I can. One more

thing, I develop eye strain when reading online. My eyes are shorter sighted than years before.

In line with Purit, Nuttha, another female student from the North explained another major disadvantage of reading online texts. She noted that "online texts unfortunately make your eyes fatigued."

These two perspectives provide insight into the major drawbacks of frequent ICT use for students. Participants also discussed the tendency to depend solely on the internet as a source of information.

Internet Dependency

It appears that frequent use of ICTS encourages internet over-dependency. The participants discussed personal reasons for their negative attitudes towards using the Internet for ESL/EFL learning. Nuttha, for example, mentioned that students become more dependent on the Internet and think of the Internet as the only source of information. Here are her comments:

First, I think I waste my time searching the Internet. For example, I can spend 3 hours but I don't get anything. It is wasting my time. The second thing is that we need to depend on the Internet and the technology. I feel like if you don't get anything from the Internet, you will feel like you can't go anywhere else. It's just the end of the world, which is not true. There is still something there, like the library. I have never used the library. If you can't find something from the Internet, you get stuck. You don't spend your time searching for books because you are used to using the Internet.

Another student, Parin, who was from a university in the South, supported Nuttha's comments by saying that:

I think technology can help make things go faster, you understand it faster but eventually, it's not technology, it is yourself. Eventually, you can't depend on the technology; you have to depend on yourself. Right now, people are too dependent on technology. Technology is just a facilitator but it's not the main thing. You need to help yourself.

The above examples reveal another important aspect regarding ICT tools. Through the use of the Internet, students have access to limitless information. Since the students are addicted to a convenient way of learning, essential cognitive functions such as decision-making and meaningful learning might not be developed. In addition, participants believe that teachers also play a role in their use or nonuse of ICTs.

Teachers' Roles

When they were asked about their challenges in learning English using digital technology, they mentioned that they did not have major problems in relation to using technology. However, most of the participants mentioned the role of teachers whether they were Thai or American, in terms of incorporating technology in classroom teaching. The participants had different ideas of the role of teachers. Purit, for example, noted that American teachers incorporate technology as a routine as we can see from the example below.

Purit: Thai teachers mostly depend on printed materials like books. They don't use technology that much as the engineering teachers, in the Lab., They use only audio unlike in the U.S., they use both visuals and audio.

In contrast, Thongchai, a male student from a university in the Northeast, preferred studying English with Thai teachers. He noted:

I prefer Thai teachers. I think they understand Thai students. They know our nature and our learning styles. American teachers are not bad but I think I prefer studying English with Thai teachers. Regarding the ICT use, I think both Thai and American teachers should use technology more often.

These examples show that the participants were not fully satisfied with the teachers' use of ICTs in English classrooms.

Internet Access (Thai vs. U.S)
The participants also discussed the Internet access between Thailand and the U.S. Internet access includes access to computers, the Internet, and computer labs, fast and slow internet service. The students' comments are as follows:

Purit: Before I came here in the U.S., I was a tutor. Normally, Thai students have listening problems. I asked my students to listen to videos in English on YouTube. The Internet and the technology were right there but they didn't know how to use it. It's kind of funny. However, there are some limitations. If you are a student in a very small school, you might not have access to the Internet. Your school might not be able to afford it.

The example above shows the student' concerns in relation to both technology-related and human-related factors.

Mismatch between in-and-out-of Class Use of ICTs
The participants also raised concerns about mismatches between in and out of class use of ICTs among students. That is, most participants identified Thai students as highly computer literate but the problem is, they did not know how to make use of it. Another problem is that teachers didn't incorporate the technology in class. Purit, for example mentioned:

I think, Thai students are really good at using the Internet, and the technology. I mean, they are computer literate, whereas the teachers are not that good. Or maybe they are good but they don't use it that much. I don't know. I think they don't have any problem in terms of using the technology. Maybe they are better than their teachers. However, they don't make use of it. They need to be more confident.

These statements demonstrated that what the teachers did in class were not in line with the students' literacy practice out-of-class.

Identity
ICT provides learners' unlimited resources to practice English and it also reconceptualizes students' identities as multiple, complex, and dynamic. The comments of Lalida supported these statements.

Lalida: Another thing is that when you talk to friends, you need to update all the details in your Facebook. If you are not updated, you can't talk to your friends, you don't understand what they are talking about. It's just status symbol. You don't need to be concerned with someone else business. My friend says '"oh, did you check that person's profile?" I would say "No, not yet". So you lose track of yourself. You haven't caught up with them. You don't understand them. I kind of lose my confidence. I' m not in their social circle.

This interview excerpt reflects the student's lack of confidence toward the use of technology.

Educational Philosophical Challenges
The findings demonstrated that technology and language are not the main problems but conflict in educational philosophy between the participants' home countries and that of the U.S. affected the way they learned English. Nuttha, for example, mentioned her learning of writing as follows:

For writing, I don't think my writing is good, but you become familiar with the format. You learn more about writing styles. You, again, log on to Google and search. It makes you write easier, not better. So, the answer is just there, on the Internet. In order to write better, you need to have a repertoire of vocabulary and grammar. So, I don't think I write better but I become familiar with format and I can find the grammar rules from the Internet. So, I just copy and paste.

This example illustrates that this student was familiar with memorization-based learning approach and she was likely to plagiarize.

6. Discussion
The findings of this study supported Miller & Borowicz (2006) that in the technology-based learning society, the notion of literacy has dramatically shifted from the conventional sense of reading and writing only print texts to an expanded sense of reading and writing multiple forms of non-print texts. The participants of this study gained information using various multimodal layers in learning. The use of multiple texts and media forms allows these students with the opportunity to understand and relate to the increasing complexity of different modes of meaning (New London Group, 1996).

A number of researchers have proposed that digital technology offers a global data base of authentic materials that can enhance language learning and teaching (Son, 2007). As shown in the students' responses, the participants had a positive attitude toward digital technology in language learning. They viewed technology as a tool to practice language skills and technology is helpful for their own language development. The participants of this current study enjoyed searching for information, and listening to authentic use of English. The findings supported Bao (2006), Hussain

et al, (2010) and Son (2007) comments that frequent Internet and technology use helped ESL/EFL students with their oral English, improved their English reading comprehension, enlarged their English vocabulary, and enhanced their English writing. Also, most of the participants found digital technology to be valuable in terms of accessing information, receiving instant answers and the ability to work by themselves. However, some students were not fully satisfied with the role of teachers (whether they are Thai or American) in incorporating technologies. Pullen & Cole (2010) recommended that the role of teachers as facilitators is an important factor in the success or failure of ICT use in the language classroom.

With a positive attitude toward technologies in general, however, most students agreed that English teachers should incorporate technologies as a regular part of their language course. They suggested that a variety of activities should be developed. The findings supported Shoffener, De Oliveira & Angus (2010) that while conceptions of literacy have expanded, and traditional print literacy is most commonly found in the U.S. classrooms.

This study supported Hussain *et al*. (2010) and Son's (2007) conclusions that technology can be used as both learning and teaching tool. It provides an extensive range of authentic materials as well as a more learner-centered medium of instruction, which can foster classroom-based activities.

Although there were favorable reports on the technology, there were some complaints in regard to the nature of online reading. As the online or hypertexts are non-linear and equipped with visual, audio, and texts, the participants considered reading long articles from the Internet as frustrating and discouraging. In fact, the participants mentioned that they preferred to print out texts and read them as conventional print texts. This is in line with Bakar *et al*. (2011) and Tseng (2010) who reported that the students frustrated with iILLs reading. Bakar *et al.* suggested that students need more time to familiarize themselves with the system and that training is needed. In addition to being frustrated and discouraged when reading hypertexts, the students mentioned that they developed eyestrain when reading hypertexts on computer screens. This answered Tseng's (2010) question whether the students do not read because hypertexts caused eyestrain or they do not read because they just do not like it. To be more specific, the findings suggested that the participants wanted to read in general, but they did not like reading online because of eyestrain.

The findings supported Sheard and Carbone (2008) that the teachers used technology as supplemental resources and that Asian international students experienced particular problems as a result of cultural differences. That is, the results confirmed Badke's (2011) comments that Asian international students are computer literate but they were taught to rely heavily on teachers and never challenged the views of the experts. From the interviews' responses, the participants sometimes struggled while performing online searches due to their English deficiencies. Also, they were from memorization-based educational setting where they were not familiar with critical thinking. Some of the participants used digital technology, particularly the Internet as a source to copy its work instead of using technology as a tool to learn. It supported Badke (2011) that technology and language are not the main problem but the conflict in educational philosophy between Asian countries and that of the U.S.

The study supported Ajayi (2011) comments that teachers are challenged to offer richer learning experiences for their students and that the pressure on teacher education to prepare pre-service teachers will widen in the future. Today students, who are surrounded by multimodal text forms such as video games, movies, and visual images, expect their teachers to assist them with a variety of learning activities. These new combinations of knowledge associated with multi-literacies call for language teachers to play a part in helping students in their language learning. Rowsell, Kosnik & Beck (2008) recommended that what is needed in the pre-service teacher preparation is a new vision. That is, a new curriculum that provides possibilities for greater participation for all students is required. Language teachers should be able to understand how technologies play a part in learning and they should develop effective pedagogical strategies to integrate new literacies within the traditional learners. As Davies (2006) stated that 21st century students increasingly become multi-modally literate while their schools still remain print-based. As almost all six participants mentioned that both Thai and American English teachers still focused on using print-based materials without realizing how the society has changed.

Literacy is no longer decoding skills but a combination of different skills with a broadened meaning of educational, cultural, and social implications for students (Ajayi, 2011). The findings of this current study demonstrate that the participants seemed to be aware that the skills to access and read information from multimedia technologies are part of their everyday social interactions. The participants were provided with opportunities to make their personal lives more productive and fulfilling through the Internet and ICTs (Leu, Kinzer, Coiro, & Cammack (2004). English teachers, whether they are Thai or American, are required to link students' out-of-class ICT use with in-class literacy learning. Therefore, the question arises: What is the role of English teachers in this 21st century? Teacher education should be able to support preservice teachers to analyze technology in order to determine which new technologies can support learning experiences in the English classrooms. As Gee (2003) mentioned that today students are required to be critical language learners so that they can extend their knowledge and construct knowledge in a changing world. The role of teachers is to help them in developing deeper understanding of literacy instruction.

7. Implications
The research findings have important implications both pedagogically and empirically.

First, English teachers should be trained in order to be ready for this technology-based teaching era. Within this new paradigm, English teachers need to work with administrators, policy makers and students themselves. Such a partnership will be designed to encourage the use of ICTs in the classroom.

Second, since the participants of this study consisted of Thai ESL graduate students studying in the U.S., their attitudes may not be able to represent all the Thai graduate students studying in the U.S. Therefore, there is a need for future research to find out further information related to Thai students studying in the U.S. to better understand their perceptions toward the use of ICTs in English classrooms. In addition, other internal factors such as belief in ICT use, motivation to use ICTs, and external factors such as access to the Internet, ICT training and etc. should be taken into consideration.

Third, in addition to the qualitative study, a longitudinal mixed-method study should be done to find out how related factors affect the ICT use. Since this current study was conducted in the U.S. context, future research can be done investigating Thai students studying in Thailand, both in the metropolitan areas and the rural areas including colleges from different regions across Thailand.

8. Conclusion

For the past years, schools have placed an emphasis on the use of digital technologies in English language teaching to help improve the learning of English among ESL/EFL learners worldwide. It was also anticipated that digital technology implementation would also enhance higher-order learning outcomes and critical thinking skills for students in English classrooms. Results from this study are helpful for universities since it provided the perceptions and problems of Thai ESL students regarding the use of digital technologies in classrooms. Although the use of ICTs among Thai and U.S. teachers seemed to be relatively low, the findings would be of assistance to both teachers and students. They could identify the problems related to ICTs use and they further could take appropriate action to overcome the problems so that the ICTs could be used effectively by teachers and students. The use of ICTs within international contexts is in line with the tenets of multicultural education which involve restructuring curricula and educational institutions so that students from diverse social classes, racial, and ethnic groups can experience equal educational opportunities (Banks, 2004). In order for students to be successful, educators need to understand their values and the cultural tools that they use, so as to better serve their needs. ICTs are the biggest cultural tools used by students including Thai students in America. It is therefore critically important that American educators pay attention to the ways that they can integrate ICTs meaningfully into their teaching in order to motivate and create more authentic teaching and learning opportunities for international students.

9. The Authors

Nuwee Chomphuchart, Ph.D. is an Assistant Professor in the School of Humanities, University of the Thai Chamber of Commerce, Thailand.   Her research interest is in the areas of literacy, ESL instruction, and learning processes.

Chinwe Ikpeze, Ph.D. is an Assistant Professor at St. John Fisher College, U.S.A. Her research and publications are in the areas of cultural impacts on learning achievements, classroom management, and educational technology.

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