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A QUALITATIVE CASE STUDY ON CELL PHONE APPROPRIATION FOR
LANGUAGE LEARNING PURPOSES IN A DOMINICAN CONTEXT

by

Gisela Martiz

A dissertation submitted in partial fulfillment
of the requirement for the degree

of

DOCTOR OF PHILOSOPHY

in

Instructional Technology and Learning Sciences

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Logan, Utah

2015

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ABSTRACT

A Qualitative Case Study on Cell Phone Appropriation for Language Learning
Purposes in a Dominican Context

by

Gisela Martiz, Doctor of Philosophy

Utah State University, 2015

Major Professor: Mimi Recker, Ph.D.

Department: Instructional Technology and Learning Sciences

This research study investigated how a Dominican English language teacher and her students appropriated cell phone features for educational purposes inside and outside the classroom. The dissertation used a qualitative single-case study design that focused on five subcases, comprised of the teacher, and four students selected from a class of 23 students. A mobile human-computer interaction (MHCI) perspective was used to explore participants' appropriation of features in their cell phones to support educational activities in a Dominican context. Data collection took place for 8 weeks in an English language center located at a public university in the Dominican Republic in the summer of 2014. Primary data collection sources consisted of semistructured interviews, informal conversations, classroom observations, and questionnaires. Data were analyzed through thematic analysis by using initial, in vivo, and focused coding techniques to identify emerging themes. Findings identified four major themes on how the teacher

appropriated different cell phone features that allowed her to use this mobile device for educational purposes: cell phone as connectivity tool, content delivery tool, research and reference tool, and assessment facilitation tool. Emerging themes from analyzing the four student subcases indicated that they appropriated features in their cell phones in different ways, including: iPod as a cell phone (student 1), assessment and feedback facilitation tool (student 2), peer- and self-assessment facilitation tool and e-reader (student 3), and multimedia delivery and social interactivity tool (student 4). Themes across subcases and from the classroom in general indicated that participants used features that allowed them to appropriate cell phones as tools for data gathering and note taking, reference and research, collaboration, and repository. Findings from this dissertation shed light on how a teacher and students can make use of their own mobile technologies to support English language learning in a Dominican classroom with uneven access to technology.

(195 pages)

PUBLIC ABSTRACT

A Qualitative Case Study on Cell Phone Appropriation for Language Learning
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Gisela Martiz, Doctor of Philosophy

Utah State University, 2015

This research study investigated how a Dominican English language teacher and her students appropriated cell phone features for educational purposes inside and outside the classroom. The dissertation used a qualitative approach that focused on the teacher, and four students selected from a class of 23. Data collection took place for 8 weeks in an English language center located at a public university in the Dominican Republic in the summer of 2014. I collected data through interviews, conversations, classroom observations, and questionnaires. Data were analyzed to identify emerging themes that described how the teacher and students used their cell phones for different educational activities related to English language learning. Findings identified four major themes on how the teacher used different cell phone features for educational purposes: cell phone as connectivity tool, content delivery tool, research and reference tool, and assessment facilitation tool. Findings from the four student subcases indicated that they appropriated features in their cell phones in different ways, including: iPod as a cell phone (student 1), assessment and feedback facilitation tool (student 2), peer- and self-assessment

facilitation tool and e-reader (student 3), and multimedia delivery and social interactivity tool (student 4). Themes across subcases and from the classroom in general indicated that participants used features that allowed them to use their cell phones as tools for data gathering and note taking, reference and research, collaboration, and repository. Findings from this dissertation shed light on how a teacher and students can make use of their own mobile technologies to support English language learning in a Dominican classroom with uneven access to technology.

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CHAPTER I

INTRODUCTION

Learning the English language has become of utmost importance for the professional development of young adults in Latin American countries such as the Dominican Republic (“El idioma Inglés es Fundamental,” 2008). Competitive positions in the Dominican labor market demand that professionals have at least basic knowledge of the English language to get a job with incomes that ameliorate their socioeconomic situation. For example, sources for employment are frequently available in the tourism sector, one of the main business industries in the country, where English has become the global language for communications with foreign investors and visitors (Padilla & McElroy, 2005; Villareal & Van der Horst, 2008). Call centers are another option for young adults with a strong knowledge of English language. These types of business have increased considerably in the past decade, providing more sources of employment (Nivar, 2015). These factors drive young adults in the country to enroll in English language courses in both private and public institutions to achieve their professional goals.

Technology has been used at all educational levels for decades to assist English language teaching (Salaberry, 2001; Vanderplank, 2010; Zhao, 2003). In the Dominican Republic, the use of technology has been implemented in the English language classroom, evolving from cassette-players to audiovisual resources (such as CD and DVD players), to computer labs with Internet access and classrooms with LCD projectors. However, since this is a developing country, access to electronic technology is unequally distributed within the population (Velasquez, 2012). In the educational context, for

instance, while some institutions have modern computer labs, classrooms with LCD projectors, and constant Internet connectivity, others only count on CD-players, or teachers' personal laptops as technology resources in the classroom (Martiz, 2013a). Teachers and students need alternatives to integrate present-day technologies into the English as foreign language (EFL) classroom, and so complement the language teaching-learning process.

Despite the limited access to technological resources in many EFL classrooms, teachers and students have other types of technologies with potential educational use: cell phones. By 2008, eight out of every ten Dominicans between 18 and 25 years old had subscribed to a prepaid or monthly paid mobile plan (International Telecommunication Union [ITU], 2009). The number of mobile lines in the country has increased considerably since then (Instituto Dominicano de Telecomunicaciones [Indotel], 2008, 2014). The trend in the use of more modern cell phones is increasing among Dominicans across socioeconomic statuses, whose aspirations include to acquire these mobile devices in the short term ("Estudio Revela," 2015).

The rapid evolution of technology has led to the increasing use of mobile devices, and researchers are already taking these technologies into account for educational purposes, promoting what is called *mobile learning* (Ally, 2009; Ferreira, Klein, Freitas & Schlemmer, 2013; Pollara & Broussard, 2011; Traxler, 2007, 2011a). Mobile learning research has been implemented in foreign and second language education, with cell phones being the most featured mobile devices in the studies (Burston, 2011; Chinnery, 2006; Kukulka-Hulme, 2009). Positive results include that mobile technologies help

promote learning, increase motivation and participation of students (Begum, 2011; Cavus & Ibrahim, 2009; Gromik, 2012), facilitate student access to information, and enable students to create their own context and content for learning (Kukulska-Hulme, 2010; Ros i Solé, Calic, & Neijmann, 2010). In a Dominican context, cell phones may represent an affordable way to integrate modern technology into the EFL classroom that provide innovative ways to encourage students' meaningful learning.

Statement of the Problem

The English language has become an important component for young adult professional development in Latin American countries, including the Dominican Republic. While technology has been used in this developing country to enhance adult English language learning, many EFL students are at disadvantage in accessing and using high-end technology resources inside and outside the classroom. A notable gap exists in access to electronic technology, which is unequally distributed, including educational institutions (Velasquez, 2012). This situation may interfere with student achievement of meaningful learning experience. A proper integration of technology in the EFL classroom facilitates the acquisition of the cultural knowledge needed to communicate effectively in the target language (Vanderplank, 2010). Thus, it would be useful for English language teachers and students to explore the potential of mobile technologies at hand to support teaching practices and enhance the language learning experience.

Cell phones are the most common mobile devices in mobile learning research, and is mostly due to their popularity among the student population (Cavus & Ibrahim,

2009; Cui & Wang, 2008; Traxler & Kukulska-Hulme, 2006). Although cell phones' design was not originally intended for educational purposes, features in the latest models have contributed to the increasing use of these devices for learning (Burston, 2014; Cheung & Hew, 2009; Kukulska-Hulme, 2012).

Despite the widespread interest in investigating the use of mobile devices for educational purposes across different fields, my literature review found that most existing research has been conducted in North America, Europe, and Asia (Cheung & Hew, 2009). In the field of foreign language teaching, findings are from studies conducted in countries of East and South Asia (e.g., China, Japan, Korea, Indonesia, Philippines, Turkey; Burston, 2014). In Latin America, research on mobile learning, in foreign language mainly, has been limited with the exception of some studies conducted in Mexico, Colombia, Chile, and Brazil (Jara, Claro, & Martinic, 2012; SCOPEO, 2011; Tsinakos, 2013).

Cell phones represent potential educational tools for Dominican EFL learners, especially for those young adult learners who have limited access to more advanced technologies in the classroom, so research on this topic is worth pursuing. It is necessary to examine how cell phones can be used to enable EFL teachers and students to effectively implement educational activities within the limitations of a Dominican context.

Purpose of the Study

The purpose of this dissertation study was to investigate how a Dominican

English language teacher and her students appropriated cell phones for educational purposes inside and outside their EFL classroom. The study also investigated which cell phone features enabled the participants to appropriate these mobile devices for the implementation of different activities for language learning in a Dominican context.

A main objective of the study was to shed some light on how to face unequal access to technology in an EFL classroom by providing ideas for the effective implementation of activities in which teachers and students could make use of personal mobile technologies. With such a rapid evolution in technology, today's generation of young adult learners, regardless of socioeconomic background, are more exposed to newer mobile devices. Being up-to-date with pedagogical approaches to newer mobile technologies can be a challenge for EFL teachers who want to create new opportunities to integrate cell phones and other mobile devices to address students' needs. This study aimed to provide information that could help EFL teachers and students integrate cell phones to create more effective educational activities within learning environments with limited high-end technology.

Research Questions

The following are the research questions addressed in the study.

1. How has a Dominican English language teacher appropriated cell phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

2. How has a group of Dominican English language students appropriated cell

phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

Definition of Terms

Appropriation: Exploration, adaptation and adoption of an artifact, going beyond its intended regular use.

Context: The information learners use to describe the situation of an entity—people, places, or objects—relevant to the interaction between the learner and the artifact.

Conventional or regular cell phone: Low-cost cell phone that includes basic features such as voice messaging, short-message service (or text messaging), camera, video recording, Bluetooth, sometimes Internet access for browsing, and instant messaging.

Hotspot: Wi-Fi access points available to the public.

MALL: Mobile-assisted language learning, or language learning facilitated by the mobility of the learner and/or portability of mobile devices.

Mobile devices: Portable electronic technologies small enough to fit in a pocket or a purse, and can be carried most of the time.

Mobile learning: Learning with the assistance of small portable electronic devices (cell phones) available to the learner when needed

Smartphone: Mobile device that combines the features of cell phones and portable digital assistants (PDAs), including greater storage for images, videos and files, and faster Internet connection

Physical context: Classroom location (or other setting where learning occurs), instructional resources, lighting, noise levels and temperature.

Social context: People we interact with, background, habits and daily practices, rules and norms inside and outside the classroom

Wi-Fi: Technological infrastructure in which devices such as laptops, desktop computers, tablets and smartphones (with Wi-Fi capabilities) can connect wirelessly to the Internet within a specific range.

Outline of Dissertation

This dissertation study follows a five-chapter format, which covers introduction, review of the literature, methods, findings, and discussion and conclusion. In Chapter I, I describe the background and state the problem that needs to be addressed. I also present the dissertation purpose, research questions, and define the key terms used in this dissertation. Chapter II comprises the review the literature on mobile learning, its application in the field of second and foreign language teaching, the state of research on mobile learning in Latin America, and the theoretical perspective selected to frame this dissertation. In Chapter III, I restate the purpose of the study and the research questions. In addition, I describe my position as a researcher, as well the research design selected, which includes the strategies for sample selection, as well as data collection and analysis. Chapter IV reports the results of this study by presenting the emerging themes and other findings from the data analyzed. Finally, in Chapter V, I discuss the findings presented in Chapter IV in light of the theoretical perspective and previous literature. This chapter also

includes the contributions of the dissertation study, its limitations and delimitations, and recommendations for future research.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Because of rapid technology development, new approaches in EFL teaching are providing learners with more authentic and real-world opportunities for language learning. Although technology has been integrated in the Dominican EFL classroom, a gap exists in access to high-end technological resources. Mobile devices, such as cell phones can provide an alternative to address this disadvantage.

This chapter will review research studies about the integration of mobile devices in language learning instruction, with a focus on cell phones. The purpose of this review is to provide some understanding on how to address the technology gap in the Dominican EFL classroom with the assistance of cell phones. After explaining the inclusion criteria for this review, a brief overview of mobile learning showed the various definitions given to this term. The next section will describe several research studies on the use of cell phones for mobile assisted language learning. This section also presents contributions and limitations found in the studies selected, and potential approaches to consider in future research studies in Dominican settings and other countries. Next, a discussion about the status of mobile learning research in Latin America and the Caribbean will be followed by a brief description of two small-scale qualitative studies that explored Dominican teachers' and students' perspectives on this topic. The final section provides a description of the theoretical perspective proposed for the dissertation study to best approach the

exploration of teacher and student educational use of cell phones.

Inclusion/Exclusion Criteria

The main sources for this literature review consisted of articles from the following databases: ERIC through EBSCO host, Education Full Text (with ERIC cross-search), SCOPUS and Google Scholar. In order to locate the articles in the library databases, a combination of the following descriptors was used: Mobile learning, Mobile or Cell phones, Mobile devices, Language teaching, Mobile language learning, English learn*, MALL, and appropriation. The list of references in seminal articles provided additional sources. Articles reporting empirical studies were selected using the following criteria.

- Studies with a quantitative, qualitative or mixed-methods approach published in peer-review journals, or presented in proceedings of highly respected conferences related to mobile learning, and language learning and technology.
- Studies where small mobile devices (e.g., cell phones, PDAS, iPods, Mp3) were the primary instructional tools.
- Participants in the studies were language learners in an adult or higher education setting.
- The studies reported the benefits (e.g., learning gains, language improvement) and limitations of interventions that included any cell phone feature integration
- The studies reported learners, teachers and other stakeholders' perceptions on the educational use of cell phones.

- Studies informed the theoretical perspective or related constructs selected for this dissertation study.

Review and conceptual articles were included the used the following specific criteria.

- Articles published in peer-review journals, or proceedings of relevant conferences in the field of mobile learning, or language learning.
- Reviews reported the current state of mobile learning in the field of language education.
- Reviews reported on theories related to the implementation of mobile learning in higher and adult education.

Additional sources included book chapters, journal and best-practices web-sites, as well as practitioners' blogs and statistic sites. These were included in the review if reporting on educational uses of cell phones for language learning purposes. Also, these were included if they informed the theoretical framework and constructs used for the dissertation study.

Empirical articles were excluded if studies were conducted prior to year 2001. These were also excluded if conducted with student or teacher participants in elementary or high-school settings, or laptop computers were referred to as mobile devices in the articles.

What is Mobile Learning?

Mobile learning has been subject to multiple definitions due to the rapid

development of the field and the different meanings behind to the term “mobile” (Ferreira et al., 2013; Sharples, Taylor, & Vavoula, 2007; Traxler, 2007, 2011a). Mobile learning was initially defined as a sub-set of e-learning (Caudill, 2007; Chinnery, 2006; Quinn, 2000). Initial projects on mobile learning took place with pilot studies and trials adapting existing e-learning instruction to mobile devices (Kukulska-Hulme & Traxler, 2005; Trifonova & Ronchetti, 2003). Mobile devices are small electronic technologies that people can carry with them at any place, any time, and include all types of cell phones, mp3 players, iPods and personal digital assistants (PDAs), digital dictionaries, and e-book readers (Chinnery, 2006; Corbeil & Valdes-Corbeil, 2007; Cui & Wang, 2008; Stockwell, 2010).

Some researchers in the field argue that mobile learning is more than simple e-learning on mobile devices, and represents a different type of learning modality (Pachler, Bachmair, & Cook, 2010; Traxler, 2009; Winters, 2007). Traxler (2007) argued:

Some advocates of mobile learning attempt to define and conceptualise it in terms of devices and technologies; other advocates define and conceptualise it in terms of the mobility of learners and the mobility of learning, and in terms of the learners’ experience of learning with mobile devices.” (Abstract, para. 3)

Mobile learning is also defined as learning mediated by the assistance of small portable devices available most of the time and that can be adapted to the learner’s immediate context (Kukulska-Hulme & Traxler, 2005). Keegan (2005) argued that mobile learning should focus on the mobility of the device, and he defined it as learning on electronic devices small enough to fit in a pocket or purse. Since the literature presents a myriad of definitions for mobile learning, the term, as used in this dissertation study, will be delimited by Kukulska-Hulme and Shield’s (2008) definition “... learning

mediated via handheld devices and potentially available anytime, anywhere” (p. 273).

Thus, I will define mobile learning as learning with the assistance of small portable electronic devices (cell phones) available to the learner when needed.

Mobile Devices and Language Learning

The increasing use of mobile learning in the language education field has given origin to what is known as Mobile Assisted Language Learning (MALL), or language learning facilitated by the mobility of the learner and/or portability of mobile devices (Chinnery, 2006; Kukulska-Hulme & Shield, 2008). These technologies have been used for language learning purposes inside and outside the classroom (Burston, 2014; Kukulska-Hulme, 2010; Kukulska-Hulme & Shield, 2008). MALL research has been implemented in the study of learning different languages, such as French (Demouy & Kukulska-Hulme, 2010; Moura & Carvalho, 2008), Irish (Cooney & Keogh, 2007), and Italian (Levy & Kennedy, 2005); but English has been the most researched language in MALL (Basoglu & Akdemir, 2010; Cavus & Ibrahim, 2009; Hayati, Jalilifar, & Mashadi, 2013; Mahruf, Shohel, & Power, 2010; Nah, White, & Sussex, 2008; Stockwell, 2010). Language education research is taking advantage of the increased use of mobile technologies, which breaks the boundaries of language learning inside the classroom, and provides educators with the opportunity to apply more innovative approaches with their students. MALL research has made use of different mobile devices, such as PDAs, Mp3s, and iPods (Burston, 2014; Ducate & Lomicka, 2013; Hoven & Palalas, 2011; Kukulska-Hulme & Shield, 2008), but cell phones have been the most popular across studies.

Cell Phones in MALL Research

Cell phones are the most common mobile devices in MALL research, due to their popularity among the student population (Burston, 2014; Cavus & Ibrahim, 2009; Cui & Wang, 2008; Pollara & Kee Broussard, 2011; Traxler & Kukulska-Hulme, 2006; Viberg & Grönlund, 2012). Although cell phones' design was not originally intended for educational purposes, latest models have contributed to the increasing use of these devices for learning (Cheung & Hew, 2009; Kukulska-Hulme & Traxler, 2005). Today's cell phones differ from earlier models in that new features have been added, making them more versatile and ubiquitous (Ferreira et al., 2013).

Considering their features, and capacity for accessibility and connectivity, cell phones can be classified in conventional cell phones (also known as regular cell phones or feature phones) and smartphones (Red, n.d). In general, *conventional* or *regular cell phones* are low cost and include basic features such as voice messaging, short-message service (or text messaging), camera, video recording, Bluetooth and sometimes Internet access for browsing and instant messaging (Cui & Wang, 2008; Ekong, 2008).

Smartphones are mobile devices that combine the features of cell phones and PDAs, which include greater storage for images, videos, and files, and faster Internet connection (Cheung & Hew, 2009; Corbeil & Valdes-Corbeil, 2007; Ferreira et al., 2013). A main difference that makes smartphones more appealing than regular cell phones for mobile learning practices today is that smartphones work with an operating system (OS) and allow the download of native applications (known as Apps). These two characteristics facilitate the installation of already existing programs that can be used for language

learning activities. For the purpose of this dissertation, *cell phones* refer to both smartphones and regular cell phones. When referring to a specific type of cell phones, their name will be indicated as such.

Several research studies have been conducted on the use of cell phones as language learning tools. Research methodologies used to investigate the effectiveness of cell phones as learning tools, as well as participants' perceptions toward the devices, varied across the studies found in the literature. Some studies used a quantitative approach (Cavus & Ibrahim, 2009; Hayati et al., 2013; Hsu, 2013; Kiernan & Aizawa, 2004; Kim, Rueckert, Kim, & Seo, 2013; Stockwell, 2010; Thornton & Houser, 2005; Zhang, Song, & Burston, 2011). Authors in most of these studies used inferential statistics (ANOVA, paired *t* tests, independent *t* tests) to examine the efficacy of cell phones in increasing student language learning through instructional content delivery, and Likert-scale survey questionnaires to identify participants' attitudes toward these mobile devices. Other studies used mixed methods, combining qualitative and quantitative data collection techniques to examine language learning achievement using cell phones and participants' perceptions (Aamri & Suleiman, 2011; Basoglu & Akdemir, 2010; Begum, 2011; Mahruf et al., 2010; Nah et al., 2008). The methods of data collection in these studies included paired *t* tests, surveys, interviews, and observations. Few studies adopted a qualitative approach, using focus groups, semistructured interviews, and observations to study participants' integration of cell phones as language learning tools and student and teacher perceptions to this integration (Clarke, Keing, Lam, & McNaught, 2008; Gromik, 2012; Song & Fox, 2008).

The cell phone feature most commonly considered across the empirical studies reviewed was the short-message service (sms), also known as text messaging (Begum, 2011; Cavus & Ibrahim, 2009; Clarke et al., 2008; Hayati et al., 2013; Stockwell, 2010; Thornton & Houser, 2005; Zhang et al., 2011). For instance, Cavus and Ibrahim (2009) looked into the use of sms supported by a system that they developed to teach new technical English words to first-year Turkish college students. Participants enjoyed the new way of learning outside the classroom and were satisfied with what they had learned. Hayati and colleagues (2013) conducted a study on learning English idioms through sms, compared with self-study and contextual learning. Fifteen Persian students in the sms group received four idioms daily in their cell phones for 2 weeks. According to results, students in this group obtained higher scores in the posttest. The post survey also indicated that the sms group students were more engaged in learning than the students in the other groups.

Clarke and colleagues (2008) analyzed the attitude of students of English in two different cohorts in Hong Kong on the use of cell phone sms and PDAs to practice English. Findings showed that attitude among students was mostly positive; thus, the authors concluded that sms is a cell phone feature that offers more opportunities for mobile learning activities, since it is available on most cell phones. The authors also pointed out that although in many countries, receiving text messages is free, learners may incur expenses when sending them.

When discussing previous work on this topic, Hsu (2013) remarked that former studies interpreted students' perception of mobile learning from a technological view but

overlooked that differences in outcomes may include cultural factors. The author conducted a cross-cultural study on student perceptions of language learning activities using sms, multimedia messages (MMS) and 3G communications. Forty-five participants from eight different regions in Asia who were working on graduate degrees in Taiwan participated in this study. Results showed the learners' nationality had a moderate effect on their attitude to using their cell phones as learning tools.

Stockwell (2010) focused his 3-year-long cohort study on students' preference of the platform (cell phone or desktop) to access instructional material for English as foreign language (EFL) learning. He pointed out the positive and negative effects on students' performance when using cell phones over computers to learn new vocabulary. Unlike researchers in other studies (e.g., Cavus & Ibrahim, 2009; Levy & Kennedy, 2005; Thornton & Houser, 2005), Stockwell concluded that there were no differences in students' use of both platforms, and that neither teachers nor students saw cell phones as educational tools. It seems that despite their potential, cell phones' original purpose and design could become a hindrance when used for education. The author reported the same results in a previous study using cell phones for vocabulary learning.

Begum (2011) looked into the potential of cell phones as tools in EFL teaching in Bangladesh with a case study approach focused on five EFL classrooms and their teachers. Using questionnaires for a sample of a hundred students, semistructured interviews with five teachers, and classroom observations, she examined the advantages and disadvantages of using cell phones as complementary teaching tools. Her results showed that there was a positive attitude among teachers and students because cell phone

use enhanced motivation and collaboration from both sides. However, the author also recognized several disadvantages that might prevent the application of mobile learning activities. These disadvantages include costs in content delivery (e.g., text messaging costs), as well as restriction of cell phone use in the classroom because of student misuse and distraction.

Mobile language learning research has also explored other cell phone functions, such as video recording. Gromik (2012) conducted a case study to investigate student use of cell phone video to improve oral performance, as well the students' perceptions on using this cell phone feature for learning. Nine Japanese students participated in the 14-week study, producing 30-second monologues in English using cell phone videos. The researcher collected data through surveys, interviews and observations. The results in the study indicated that students' oral confidence in English increased, and students agreed that cell phones were useful tools to improve language learning. Mahruf and colleagues (2010) analyzed teacher perceptions, and gathered opinions from EFL teachers in Bangladesh who were using videos on cell phones and iPods to improve their students' and their own listening skills. With data from semistructured interviews, the authors concluded that teachers were not confident in their professional and technology skills, but that there was a positive attitude to using iPods and cell phones as complementary tools. The authors also pointed out that more support through training is needed so that teachers' expectations on student engagement and language improvement can increase while using these technologies.

Aamri and Suleiman (2011) analyzed the general use of cell phones among

ninety-three freshmen students in an English language class in Saudi Arabia. The researchers found that students were willing to use their cell phones for educational purposes, but did not do so because of cell phone use restrictions in the classroom. The authors reported that further research should look into factors that may influence students' attitudes toward mobile learning activities.

Table 1 presents a summary of the empirical studies presented in this section where English was the target language studied. This table highlights the country where research was conducted, as well as the research methods used, the cell phone feature utilized, and the variable explored.

As seen in Table 1, the countries where the studies took place are located in East and South Asia. The different methods used in these studies inform the MALL literature in various positive ways. A strength of quantitative methods, the most used in the studies listed above, is that they allowed the researchers to compare data from participants using cell phones to assist language learning with participants using more traditional tools. For instance, some of the experimental studies compared vocabulary learning using sms with computer-based and paper-based vocabulary learning (Cavus & Ibrahim, 2009; Stockwell, 2010; Thornton & Houser, 2005; Zhang et al., 2011). In all studies except one (Stockwell, 2010), conclusions based on inferential statistics indicated that groups using sms obtained higher score in posttests than the other groups.

An advantage of the studies using qualitative methods was the opportunity to look closely at teacher and student use of cell phones as language learning tools through observations. These also provided a more in depth understanding of the experiences that

Table 1

Summary of MALL Studies

Authors/year	Country	Research method	Cell phone feature	Variable measured
Aamri & Suleiman (2011)	Saudi Arabia	Mixed methods	General use of cell phone	Student perceptions
Basoglu & Akdemir (2010)	Turkey	Quantitative	Flashcard application	Learning Student perceptions
Begum (2011)	Bangladesh	Mixed-Methods Case study	SMS (Quizzes)	Teacher & student perceptions
Cavus & Ibrahim (2009)	Turkey	Quantitative	SMS (vocabulary)	Learning
Clarke et al. (2008)	Hong Kong	Qualitative	SMS (vocabulary)	Student perceptions
Cui & Wang (2008)	China	Quantitative	Cell phone/SMS	Learning
Gromik (2012)	Japan	Case study	Video recorder	Learning Student perceptions
Hayati et al. (2013)	Persia	Quantitative	SMS (vocabulary)	Learning Student perception
Hsu (2013)	Taiwan	Quantitative	SMS, MMS and 3G communications	Student perceptions
Kiernan & Aizawa (2004)	Japan	Quantitative	SMS/ mobile email/voice recording	Learning
Nah et al. (2008)	Korea	Mixed Methods	Cell phone WAP sites	Learning Student perceptions
Song & Fox (2008)	China	Qualitative	SMS (vocabulary)	Students perceptions
Stockwell (2010)	Japan	Quantitative	PC & Cell phones/SMS	Platform preference
Thornton & Houser (2005)	Japan	Quantitative	PC & Cell phones/SMS/ email	Learning/platform preference
Zhang, Song & Burston (2011)	China	Quantitative	SMS (vocabulary)	Learning

led to participants' opinions. Researchers could gather detailed information on the participants' perceptions on these mobile devices in educational context through focus groups and semistructured interviews (Clarke et al., 2008; Gromik, 2012; Song & Fox, 2008).

Mixed-methods studies had the advantage of collecting data from a large sample of participants through statistical tests and survey questionnaires, as well as recording experiences from interviews and observations (Basoglu & Akdemir, 2010; Begum, 2011; Mahruf et al., 2010). Begum, for instance, gave a questionnaire to a hundred students, plus conducting classroom observations, and a focus group with five teachers.

Also, some authors recognized gaps in previous research, and took them into account in their research design. For instance, Gromik (2012) admitted the contributions of previous researchers, but affirmed that some mobile language learning activities were teacher-led and limited the learner's creativity to create authentic context. The author also claimed that features other than sms could provide students with more creative opportunities for learning. He used the video recording feature to enhance student speaking skills, obtaining positive results.

For research implementation in the Dominican Republic, the information provided on these studies helps consider what research methods can be more applicable and suitable to conduct a study in this country, but taking into account the differences in the contexts, participants, and time of implementation.

A main goal in learning a new language is to be able to communicate ideas effectively in real-life situations, that is, to use the target language as a tool to achieve the

purpose of communication in different social and professional environments. This ability is known as communicative competence (Celce-Murcia, 2007). Language learners should be able to tie classroom content to authentic situations in order to demonstrate a meaningful learning of the target language. Mobile learning practices can facilitate students' achievement of communicative competence by bringing into the classroom situations encountered in daily life situations (Burston, 2011). Language learners can enhance their communicative competence with the assistance of mobile devices like cell phones and mp3 players, as these can increase the opportunities for real world interaction (Kukulska-Hulme & Shield, 2008).

In particular, mobile devices can provide more opportunities for social interaction among language learners and increase their sociolinguistic competence— “the speaker (or writer’s) knowledge of what constitutes an appropriate utterance according to a specific social context” (Blyth, 2004, as cited in Kukulska-Hulme, 2012, p. 15).

However, an aspect to point out is that while MALL studies investigate the potential of cell phones as language learning tools, many have focused on passive methods for language content delivery, where there is little interaction among the language learners. Authors like Kukulska-Hulme and Shield (2008) recommend mobile learning approaches that stress speaking and listening skills in a context where language learners have a more active role. In a recent publication, Kukulska-Hulme, Norris, and Donohue (2015) presented a guide for English language teacher use of mobile devices through what they have called mobile pedagogy. In this paper, the authors provided several examples on how the teacher and students can integrate cell phones in learning activities that promote

authentic language learning experiences. The authors' purpose was to provide a pedagogical framework for the integration of mobile devices into authentic activities that encouraged learner-generated content for language learning inside and outside the classroom.

Burston (2011) addressed the use of cell phones as tools to enhance communicative competence in MobLang, a European Union funded project in which foreign language learners made use of cell phones in new instructional ways. The purpose of the project was to allow learners to interact with target language speakers, and to provide a series of exercises in which they could develop their linguistic competence, by using lexical phrases through collocations (two or more words that are generally put together in a sentence), and formulaic expressions (common phrases or expressions that are usually used as a whole). Burston's conclusion suggests that due to the rapid evolution and widespread use of mobile technology, former challenges associated with mobile device use would be more feasible to address: "The programming capacity of modern mobile phones can provide a rich mix of text, audio, graphics and even video to support language exercises designed to foster receptive and productive memory retention that targets basic communicative competence" (Burston, 2011, p. 68).

As newer mobile technologies have more advanced features with the potential to make learning more ubiquitous, language educators need to rethink some current teaching approaches (Nortcliffe & Middleton, 2013). Taking advantage of these features to implement activities inside and outside the classroom opens new doors to explore new ways to promote different aspects of communicative competence among English

language learners.

Limitations in Research Studies

Some of the studies addressed earlier faced limitations that need consideration for future research. First, several studies relied on programs and applications developed by the researchers themselves specifically to implement the studies (Basoglu & Akdemir, 2010; Burston, 2011; Cavus & Ibrahim, 2009; Stockwell, 2010). Once the studies were over, the use of cell phones as instructional tools ceased among teachers and students using it (Burston, 2014). In other cases, participants were loaned the mobile device with a preloaded application or program for the study (Song & Fox, 2008). Students were only able to work on mobile activities with the loaned devices, which reduced the possibilities of sustainable student integration of mobile devices into the language learning process. For a meaningful and lasting integration of cell phones as assistive language teaching tools, teachers and students must be able to continue their use on a regular basis, incorporating activities that can be performed with the technology that is available and adapted to their social context.

Cell phones' interfaces have evolved tremendously since the initial pilot studies in the early 2000s. In the early days of mobile learning research, many of the arguments listing challenges, limitations and disadvantages of cell phone integration in learning activities included small screen, non-user friendly keypad, limited data storage, poor connectivity, among others (Kukulka-Hulme & Traxler, 2005; Stockwell, 2010). New cell phone models have long overcome most of these constraints, especially after the introduction of touch-screen smartphones, and their considerably larger screen size (e.g.,

Samsung Galaxy Note and HTC smartphones). Current research studies must reconsider these arguments as new generations of smartphones' interfaces offer a variety of opportunities for learning, and many learners are already taking advantage of these (Ferreira et al., 2013).

Finally, a limitation in MALL research and mobile learning research in general is the scarcity of documented research in Latin American and Caribbean countries (Burston, 2014; Cheung & Hew, 2009). As seen previously, MALL research in language teaching has been implemented in countries across East Asia, Europe and the Middle-East. Research in this field is already popular in countries like China, Taiwan, Korea and Japan (Cui & Wang, 2008; Nah et al., 2008; Thornton & Houser, 2005). Findings in the literature also show that mobile learning in English language is expanding in Saudi Arabia, Turkey, Iran, Bangladesh (Aamri & Suleiman, 2011; Basoglu & Akdemir, 2010; Begum, 2011) among other countries. A similar research approach is needed in the Latin America and the Caribbean regions, where cell phone ownership has increased tremendously in the past decade (Priestley, 2012; Sutherland, 2010). The next section addresses the status of mobile learning in Latin America region.

Mobile Learning in Latin America and the Caribbean

Mobile learning in Latin America is finally taking off, with projects aimed to provide professional development to teachers in the use of affordable mobile technologies According to the UNESCO working paper series on mobile learning (Jara et al., 2012), projects are occurring in Central and South America (Mexico, El Salvador,

Honduras, Colombia, Venezuela, Peru, Chile, and Argentina). The focus of most of these projects was to use cell phones to enhance learning, by comparing institutions' initiatives and examining factors for successful development, sustainability and growth in technology and education. This working paper identified twenty-one initiatives taking place from elementary to higher education in the areas of math, science, social studies, health and development of mobile learning management systems, but only presented one project on English language teaching.

This report listed some limitations that include the little evidence of progress in some of the projects. In addition, information available about other projects was out of date. Only three of the initiatives had been updated by the time of the report, and just represented projects conducted on a small scale level. In spite of these limitations, the purpose of the paper was to present alternate possibilities that cell phones offer as low-end technologies. A monograph by SCOPEO (2011) also reported on the current status of mobile learning from the educational, technological and business perspectives in Portugal, Spain and Latin America. The monograph identified only a project on English language, a service called *Kantoo for All*, with which people could learn English vocabulary via text messaging for a low price. This service is available in Peru.

Cell phones are the most affordable mobile devices for young adults in developing Latin American countries like the Dominican Republic, where by 2008 there were 80 mobile cellular subscriptions per 100 inhabitants (ITU, 2009). In the educational sector, some institutions are at a disadvantage compared to others institutions since the affordability of advanced technologies is limited. As English language learning has

become an important component in adult education in the Dominican Republic, English language educators can take advantage of new approaches to enhance the efficiency of their teaching. General findings of cell phone use for English language learning suggest that cell phones represent an option to integrate mobile technology in an affordable way for English language education in the Dominican Republic.

Exploratory study in the Dominican Republic. Cell phone ownership is extensive in the Dominican Republic. As stated in an earlier section, statistics current to September 2014, there are over nine million mobile subscriptions in the Dominican Republic (Indotel, 2014), a country with a population of about ten million people (Oficina Nacional de Estadística [ONE], 2012). The high costs for mobile accessibility and connectivity in the Caribbean region (Galperin, 2010; Galperin & Ruzzier, 2011) could be one of the reasons for the limited expansion of mobile learning in the Dominican Republic. Still, it was necessary to investigate which other factors were present, and to what extent Dominican English language teachers were aware of the mobile learning as a new educational trend. Thus, in the summer of 2012, I conducted an interview-based study with EFL university teachers in the Dominican Republic to explore their perceptions on factors that promoted and discouraged their use of mobile devices with their students for educational purposes (Martiz, 2013a). I interviewed teachers from two different universities, seven from University A, where most students held a privileged socioeconomic status, and nine from University B, where most students had a low to middle socioeconomic background. Sixteen teachers participated in an individual one-time semistructured interview in which they provided their opinions, focusing on the

use of cell phones as learning tools, and included what they considered a successful use of these technologies. Recruiting participants from these two settings allowed me to gather insights from a context in which access to technology in the classroom was not a problem, and another context in which technology access was very limited. Comparing findings from these two different contexts allowed me to understand better which aspects, other than technology access, influenced teachers' views on the educational use of cell phones.

Increased student motivation to learn, more access to information, and the implementation of more innovative strategies were among the factors that motivated the participants to integrate cell phones into learning activities. These emerging themes on factors that promoted the use of cell phones as learning tools correlated with findings reported in the literature (Cavus & Ibrahim, 2009; Chinnery, 2006; Kukulska-Hulme & Shield, 2008). On the other hand, study participants identified barriers in engaging in mobile language learning activities, which included teachers' limited expertise in the educational use of cell phones, students' distraction, and limited Internet connectivity on students' mobile devices. These factors have also been reported in other MALL studies. (Begum, 2011; Cavus & Ibrahim, 2009; Hayati et al., 2013). As mentioned earlier, limited connectivity and accessibility through cell phones appeared to be a barrier for mobile learning integration in 2012, but the use of mobile Internet with prepaid and postpaid plans has increased considerably since then (Indotel, 2014). This mobile Internet trend is expected to continue due to the growing prevalence of more inexpensive plans, which will provide more options for mobile Internet access for the student population.

Despite the limitations of this interview-based study (Martiz, 2013a), a small sample of participants and self-reported data, its findings were of substantial importance to my dissertation study. The information gathered on these participants' perceptions about their mobile learning practices provided me with an initial perspective on the status of mobile language learning in the Dominican adult EFL classroom, what type of technology was available up to that date in two completely different social contexts, and how it was being used. Reaching out to these participants also helped me understand their concerns about administration's policy against cell phone use inside the classroom. The next step was to look into the other side of the spectrum, by exploring the Dominican student perceptions on cell phones as educational tools, and what learning activities could be implemented using these mobile devices among Dominican students.

Pilot study findings. In the summer of 2013, I conducted an exploratory case study in which a Dominican English language teacher and a group of 15 Dominican students integrated the use of cell phones in various learning activities (Martiz, 2013b). This study also examined the participants' perceptions on the educational use of cell phones. This was a pilot study conducted with a group of students who participated in the intensive 8-week summer program offered at a western American university for students who completed the Intensive English Program (IEP) in the Dominican Republic. Participants had the opportunity to implement several activities similar of the ones in the studies mentioned in earlier sections.

Data collection took place mainly through semistructured interviews, questionnaires, and classroom observations. Findings indicated that students were more

motivated in their learning as a result of integrating mobile learning activities both inside and outside the classroom. The teacher also reported the advantages of the use of these technologies, such as increased student engagement, improved participation, and better performance in classroom activities. Both teacher and students pointed out some challenges associated with cell phone integration into the educational context. These included the need for teacher creativity to develop effective activities and control student distraction with cell phones. The teacher participant stressed that it is necessary to provide training to Dominican teachers of English so that they can make effective use of the technologies that students have on hand, as well as to motivate students to take advantage of learning opportunities. She added that EFL teachers and students need to be informed about effective use of these mobile devices in order to have a better control of their presence in the classroom. Therefore, exploring how teacher and students appropriate their own cell phones for educational purposes in a Dominican setting would be the first step to address this need.

This pilot study was important because it addressed in depth Dominican students' thoughts about the use of cell phones as learning tools inside and outside the classroom. The student participants had come from different IEP centers in the Dominican Republic, and the data gathered from them allowed me to expand my initial understanding of the current status of MALL practices in my home country. This pilot study also allowed me to explore what were the most suitable theoretical perspectives to approach the topic I wanted to address in my research. The findings of the interview-based study revealed that smartphones were not common among low-income students in the Dominican Republic.

Therefore, for the pilot study I focused on the technological aspects of cell phones. That is, I was more concerned about what the teacher and the students could do with the different features in both regular phones and smartphones. Drawing from a human-computer interaction perspective I focused on the affordances of the mobile device first, and then on how participants appropriated the mobile devices for learning purposes. This exploratory study also allowed me to test the data collection instruments (interviews and questionnaire protocols), that I later modified and adapted for the dissertation.

A final lesson from the exploratory interview-based study (Martiz, 2013a) and the exploratory pilot study (Martiz, 2013b) is that mobile technologies evolve rapidly, and the ways they can be taken advantage of vary across contexts, and depend on the immediate educational needs of teachers and students, as well as aspects in the context of implementation. After considering these factors, I considered necessary to look at cell phones' potential in relation how they can be used within the limitations and opportunities of the classroom and other technology available. Examining the interaction of a Dominican teacher and students with cell phones in a limited-technology EFL classroom would help see how these teacher and students adopt new uses of features in these mobile devices to address the language learning needs in this specific context.

Theoretical Perspective: Mobile Human-Computer Interaction

An important aspect of the exploratory nature of this dissertation study is to look at the potential of cell phones for Dominican teachers and students to create and implement educational activities while interacting with these technologies. Hence, I used

a mobile human-computer interaction (MHCI) perspective to approach this topic (Botha, Greunen, & Herselman, 2010; Love, 2005). MHCI is defined as “the study of the relationship (interaction) between people and mobile computer systems and the applications that they use on a daily basis” (Love, 2005, p. 2). In this dissertation, “the mobile computer systems” referred to cell phones in particular, and applications referred to cell phone functions and features (to avoid confusion with the term *apps*). MHCI has been used to explore the potential of mobile devices for learning (Botha et al., 2010; Salovaara, 2006; Winters & Price, 2005). From a pedagogical stance, MHCI is a useful way to look at how English language learners can make use of the features in their cell phones to carry out activities to enhance their learning experience (Love, 2005; Winters & Price, 2005). To achieve this objective, this dissertation study looked at the teacher and learners’ appropriation of these mobile devices, cell phone features that enabled this appropriation, and how context influenced the ways in appropriation took place (Carroll, Howard, Vetere, Peck, & Murphy, 2002; Caudill, 2007; Cook & Pachler, 2011; Kukulska-Hulme, 2012, Salovaara, 2006; Pachler et al., 2010; Wali, Oliver, & Winters, 2009).

Appropriation

Appropriation is a concept that has been integrated into mobile learning research from different perspectives in Information Systems, HCI, and sociocultural theories to investigate the potential of mobile technologies to be adopted and shaped for new uses, including learning purposes (Carroll et al., 2002; Dourish, 2001; Jones & Issroff, 2007; Mifsud & Smørðal, 2006; Mifsud, Mørch, & Lieberg, 2012; Moura & Carvalho, 2008;

Salovaara, 2006; Waycott, 2004; Waycott, Jones, & Scanlon, 2005). Researchers have approached differently the appropriation of technology. One of the most popular approaches was presented by Carroll and colleagues. Carroll and colleagues proposed a model of technology appropriation, and defined appropriation as “the way that users evaluate and adopt, adapt and integrate a technology into their everyday practices” (p. 39). Although their research did not focus on cell phone use for learning purposes, this model provided initial perspectives on how a technology designer’s expected use differs largely of the actual use given to the technology. Technology appropriation can also be seen when people use physical and cognitive resources in everyday activities (Simoes & Gouveia, 2011). People appropriate technologies like smartphones for daily activities in different ways, such as a teenager taking advantage of the connectivity for social interactivity, whereas an older person may not see any usefulness in this feature (Alberts, 2013).

Pachler and colleagues (2010) indicated that cell phones are seen as cultural artifacts used primarily for communication and recreation that do not necessarily match with traditional didactic uses of audiovisual resources in the teaching-learning process. For the authors appropriating mobile devices corresponded with learning with them. Cook and Pachler (2011) saw appropriation as a process through which users develop personal practices with mobile devices through interaction, assimilation and change. Through appropriation, learners adopt new uses of mobile devices within already known or new cultural practices, inside and outside the classroom. Many learners appropriate cell phones and use them for needs that go beyond making calls, texting and engaging in

recreational activities. According to Cook and Pachler, users make the new mobile technology part of their daily routines and social practices, and change their habits according to the new opportunities that the mobile technology provides, and the constraints posited by the immediate context. For the purpose of this dissertation, appropriation is the exploration, adaptation and adoption of a cell phone and its features, going beyond their intended regular use.

Role of Context in Mobile Learning

Context is an important component in MHCI and other perspectives to describe the conditions under which interactions between learners and their mobile devices take place (Breuer & Matsumoto, 2008; Dourish, 2001; Kukulska-Hulme & Wible, 2008; Pachler et al., 2010; Winters & Price, 2005). The concept of “context” varies across disciplines and does not have a unique definition (Dey, 2001; Dourish, 2004; Traxler, 2011b; Winters & Price, 2005). Dey defined context as the information learners use to describe the situation of an entity—people, places, or objects—relevant to the interaction between the learner and the artifact. Dourish (2004) argued that context emerges from the interaction of people in their everyday lives, and cannot be separated from content (activity). Considering the definitions presented above, mobile language learners’ context can develop from their physical and social environments. For example, context can emerge in the English language classroom by interacting with their peers and teachers, and link to out-of-the-classroom daily activities, such as riding the bus, walking in the mall, or implementing different tasks in the workplace. As seen above, the context in which the teacher and students interact is relevant for mobile appropriation (Wali et al.,

2009), as well as the features in the mobile devices that enable this appropriation. Figure 1 presents the approach to MHCI theoretical perspective guiding this research.

Explaining MHCI from a pedagogical standpoint and appropriation within this perspective, the teacher and learners represent the users interacting, and appropriating particular features in their cell phones for different activities both inside and outside the classroom. This interaction, and the appropriation of cell phones is conditioned by the participants' social and physical contexts. Appropriation among teachers and students can occur not only when a new mobile technology is acquired, but also when a new feature is added or used differently in their already familiar mobile device.

Conclusion

The aim of this literature review was to put into context MALL research with a focus on cell phones, and how this research could provide insight to approach the limited

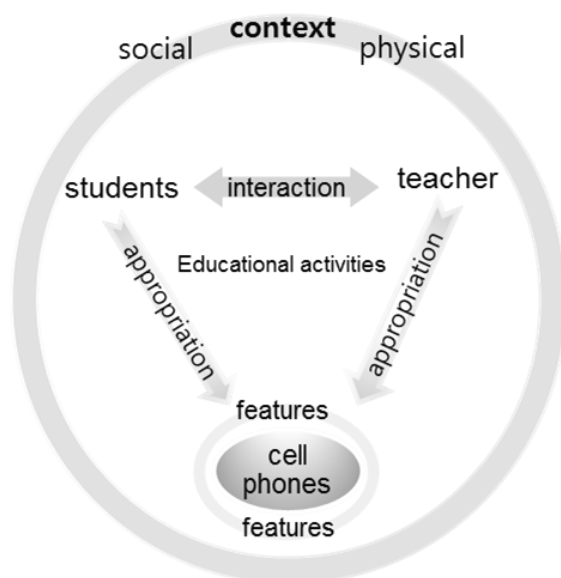


Figure 1. MHCI theoretical perspective.

access to technology in Dominican EFL classrooms. In general, the reviewed studies provided evidence that the inclusion of cell phones as learning tools inside and outside the classroom opens new doors for teachers and students to explore new ways to enhance language learning. It is necessary to start exploring the educational potential of cell phones in this setting, and how Dominican EFL teachers and learners can integrate them into formal and informal activities for language learning within their own contexts.

Conclusions drawn from this review suggested that a qualitative approach was the most appropriate for this dissertation study, as the purpose was to explore opportunities for teacher and student appropriation of cell phones. A quantitative or mixed methods design would be appropriate if, for instance, the goal were to measure if students learn better with mobile devices than with traditional resources. However, because of the exploratory nature of this research, conditions to use these approaches were not possible at the time. The review on MHCI indicated that this perspective fit the purpose of this dissertation study. This approach sought to explore the users' everyday interaction with mobile devices, taking into account the users' need and the context in which this interaction takes place. The proposed dissertation study investigated the implications of cell phones as tools for English language learning taking into account the insight provided in this literature review.

CHAPTER III

RESEARCH METHODS

Purpose of the Study

The purpose of this dissertation study was to investigate how a Dominican English language teacher and her students appropriated cell phones to implement educational activities inside and outside the classroom. The study also investigated which cell phone features enabled the participants to appropriate these mobile devices for different language learning purposes in a Dominican context. To begin with, this chapter presents the main research questions that guide this research. Next, it explains the paradigm selected and my role as researcher. The remaining sections in this chapter explain the rationale for the research design selected, describe the participants and sampling criteria, and describe the data collection and analysis methods most appropriate for this dissertation study.

Research Questions

In order to accomplish the purpose of this dissertation, the following research questions were addressed.

1. How has a Dominican English language teacher appropriated cell phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?
2. How has a group of Dominican English language students appropriated cell

phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

Interpretive/Social Constructivist Paradigm

A main objective in qualitative research is to understand how participants construct their world, interpret their experiences, and what these mean to them (Merriam, 2009; Mertens, 2010). In this dissertation study, I aimed to look at participants' interpretations on the potential that cell phones had as educational tools for English language learning. In order to achieve that, I chose to approach this research through the lens of a *social constructivist* paradigm, also known as *interpretive* paradigm (Creswell, 2012; Merriam, 2009; Mertens 2010). In a social constructivist paradigm, experiences have multiple meanings according to people's views. These meanings are socially and historically constructed through individuals' interaction with others (Creswell, 2012). Qualitative researchers interpret and make sense of the various meanings that a single experience has to different individuals. While doing so, qualitative researchers need to be aware of their own views of those experiences. Therefore, they need to establish their role within the research process to approach the case under study.

Researcher's Role

I approached this dissertation study looking back on my experiences as a language teacher in the Dominican Republic. As I was defining my dissertation topic, I considered a qualitative paradigm for my research, for I wanted to depict the ways in which an

English language teacher could take advantage of the pedagogical potential of cell phones in a context where other technologies are inherently limited. The first thing to identify was English language teachers' and students' opinions toward learning with mobile devices. This drew me to conduct an exploratory interview-based study in 2012 with teachers, and an exploratory pilot study in 2013 with students. Findings of those studies provided me with the insight to demystify some preconceptions, and to outline and propose this dissertation study.

As a qualitative researcher, I was mindful of the ways my own history shaped my study. Using an interpretive lens to the study enabled me to reflect on potential biases and personal interests about the topic. I engaged in these reflections so that the data in the study were fairly judged and evaluated (Creswell, 2008). This is an aspect to which I paid careful attention in my reflection journal. As the main data collection instrument, I needed to define my role in terms of how my interaction with those involved in the topic under study could affect my own interpretations of the findings. Therefore, my level of intervention in the classroom was limited to observing the teacher and students working on the completion of activities that included or were related to cell phone educational appropriation. The teacher was the one who encouraged students to integrate their cell phones into any activity that to her understanding enhanced the language learning experience. Looking at the context from a non-participant observer standpoint allowed me to keep my interpretations separate from any potential bias.

Research Design: Qualitative Case Study

This dissertation study aimed to provide an in-depth description of how a Dominican English language teacher and her students appropriated cell phones to implement educational activities, and which cell phone features enabled this appropriation. Therefore, I selected a qualitative approach to look at learning activities taking place in their natural locations, and to interpret the events from the participants' point of view (Creswell, 2008; Maxwell, 1996; Mertens, 2010). I utilized a case study because its design allowed to provide detailed accounts of the situation, topic or issue under investigation in a real scenario (Creswell, 2012; Merriam, 2009; Yin, 2014). Yin defined case study as a research method in which the *case* is a “contemporary phenomenon investigated within its real-world context” (p. 16). In this study, the *case* consisted of the Dominican teacher and students' appropriation of cell phone features for English language learning purposes inside and outside the classroom. This approach provided me with a general view of the case, as well as the exploration of multiple perspectives on it. That is, I was able to look at both general and particular participant interpretations on the adoption of these mobile devices inside and outside a classroom with limited technology.

In the literature consulted, the case study was the most commonly qualitative research design used to explore the learning opportunities offered by mobile devices, and participants' appropriation of these technologies (Carroll et al., 2002; Churchill & Churchill, 2008; Cook, Pachler, & Bradley, 2008; Mifsud & Smørðal, 2006; Waycott et al., 2005). This approach is also adopted in second language research, where case studies

are preferred to inform about learners' practices and techniques used to communicate and improve the target language (van Lier, 2005).

This dissertation study followed a single-case study design (Creswell, 2012; Yin, 2014). Single-case studies have two variants critical to define the units of analysis: *holistic single-case design* and *embedded single-case design*. For the purpose of my dissertation, I selected the latter to investigate general cell phone appropriation among participants, but also to look at how specific participants appropriated features in these devices in particular ways for English language learning

Embedded Single-Case Study Design

An embedded single-case study was appropriate to look at the general context of cell phone appropriation, as well as individual ways in which participants interpreted their experiences. This type of design contains several units of analysis that the researcher examines in the context of the case under investigation (Creswell, 2012; Yin, 2014).

In this embedded-case study, the units of analysis (or subcases) consisted of the Dominican English language teacher and the student participants, and the context of the case was bounded by their use of cell phones for language learning purposes within a certain time period. I utilized purposeful sampling for this research because this method was the most appropriate to select the participants that could best relate to the phenomenon under study (Creswell, 2008, 2012; Maxwell, 1996; Merriam, 2009). The criteria for the selection of these participants were bounded by the participants' and setting's characteristics needed to analyze the topic of interest.

Participants and Setting

For this dissertation study, I recruited a Dominican English language teacher and a group of young adult Dominican students participating in a ten-month intensive English program sponsored by a government institution in the Dominican Republic.

Intensive English Program. The Intensive English Program (IEP) is a program that takes place at Dominican universities and institutes for the teaching of English as a foreign language, under the coordination of an educational government institution. Classes are available in the morning, afternoon and evening sessions. This program runs for 10 months, and students must attend 4 hours a day from Monday to Friday in the session selected. Students have at their disposal free textbooks, workbooks, the textbook CD, and an EFL learning software program available to students when they attend the computer lab once a week (in facilities where computer labs are available). I selected the teacher and students based upon recommendation of the coordinator of the English center I selected for my research, after I explained in detail the purpose of my dissertation.

Participants. Participants selected through purposeful sampling are described below.

- A Dominican female teacher who had experience in EFL teaching with children and young adults, and who was familiar with the use of technology for educational purposes. This teacher participant had about 6 years of experience as an EFL teacher. Both her professional and educational background suggested that she was in general familiar with different uses of technology for language instruction. Additionally, this teacher was in a certain

way different to other teachers in the English center, as she had a particular drive for including cell phones and other technology resources in her classroom and homework activities.

- A class consisting of 23 young adult students, 7 males and 16 females. All were university students, between the ages of 18 and 24. For a more in-depth analysis of individual student cell phone appropriation, this case study focused on four student subcases or embedded units, consisting of four of the seven students that participated in the semistructured interviews. These students were selected based upon their reports of unique ways in which they used cell phone features for educational activities. Plus, these students were the most responsive when I requested to member-check preliminary interpretations of their responses.

Luis. Luis was one of the oldest students in the group, and a recent graduate with a major in Advertising at the state university. Unlike most students in the class, he owned three mobile devices: a regular cell phone, an iPod, which he carried all the time, and an Android phone he rarely used. He usually connected through his iPod to the Internet at home, and through public Wi-Fi connections.

Alba. Alba was a third-year medical student at the state university. She had a Samsung Galaxy Ace with a talk and text prepaid plan, and used Wi-Fi mainly at home to connect to the Internet. She was one of the most active and enthusiast students in the classroom, appropriating her cell phone for learning purposes in many ways.

Jorge. Jorge was a fourth-year college student studying civil engineering at a

private university. He owned an Android HTC Inspire smartphone, and like Alba, he used text and talk prepaid plans, and accessed to Internet mainly through his home's Wi-Fi Internet connection.

Andrés. Andrés was a third-year college student, studying computer science at the state university. He owned a Motorola MB200 with limited data storage, which prevented him, initially, from implementing some activities. He was the only student who opted to do the postinterview completely in English.

Classroom setting. The IEP center where I conducted the data collection was located at a public university in the Dominican Republic. Equipment in the English classrooms consisted of a radio with a CD player that teachers checked out from the main office at the beginning of each class, and returned at the end. Occasionally, the teacher supplied additional technology, including her personal laptop, speakers, and projector.

Data Collection Procedures

IEP classes begin late January and finish at the beginning of November every year. The program is divided into cycles of approximately 7 weeks each. At the end of each cycle, teachers are assigned a different group of students. For the purpose of my study, I needed to collect data during one complete cycle, so that I could collect the experiences of the teacher working with the same group of students. I traveled to the Dominican Republic from May to August for the data collection stage of this dissertation study, so that I could spend a considerable period of time of access to the research setting. Upon obtaining the corresponding approval, I collected data for 8 weeks from May to July, 2014. Once the teacher participant was identified, I scheduled a meeting with her

for the interview. After our interview, she introduced me to the class, initially consisting of fifteen students. I presented these students with the corresponding letter of information asking for their participation in the study. In the following class, eight new students joined, and these were also presented with the letter of information. The total number of students in this class was 23.

In case study research, as well as in other types of qualitative research approaches, the researcher is the main instrument of data collection and analysis (Creswell, 2012; Maxwell, 1996; Merriam, 2009); qualitative case study methods use multiple sources of data collection (Creswell, 2008; Yin, 2014). For this dissertation study I collected data through classroom observations, teacher and student interviews and questionnaires, while also holding informal conversations with participants during my visits to the classroom (see Table 2).

Data Sources

Classroom observations. Observations allowed the researcher to formulate a version of the topic under study and then check with the participants' view. These data collection techniques represent the initial source of evidence, helping the researcher become familiar with the participants and their context (Creswell, 2008; Maxwell, 1996). Upon previous coordination with the teacher, I attended classes some of the days she planned to implement activities in the classroom with the use of cell phones. Classes were held for 4 hours daily, from 1:00pm to 5:00 pm, with a 20-minute break at 2:50 pm. I conducted my observations either before or after the break for about 1 hour and 50 minutes each. I conducted five formal classroom observations in total throughout the data

Table 2

Data Sources and Analysis Summary

RQS	Data collection sources	Details	Data analysis
RQ1.	Teacher		
	Semistructured interviews	1 preinterview (see Appendix C) 1 postinterview (see Appendix D)	Thematic analysis 1 st cycle: Initial coding and In vivo coding
	Informal conversations	2 telephone conversations 5 in person conversations	2 nd cycle: Focused coding
	Classroom Observations	5 formal observations 1 hr 50 mins each	Thematic analysis 1 st cycle: Initial coding and In vivo coding 2 nd cycle: Focused coding
RQ2.	Students		
	Semistructured interviews	7 preinterviews (see Appendix A) 7 postinterviews (see Appendix B)	Thematic analysis 1 st Cycle: Initial coding and In vivo coding
	Informal conversations	At least 2 informal conversations with each of the 7 students interviewed	2 nd Cycle: Focused coding
	Classroom Observations	5 formal observations 1 hr 50 mins each	Thematic analysis 1 st Cycle: Initial coding and In vivo coding 2 nd Cycle: Focused coding
	Questionnaires	1 Prequestionnaire (see Appendix E) 1 Postquestionnaire (see Appendix F)	<ul style="list-style-type: none"> • Percentage • Bar graphs

collection stage: two before the breaks, and three after the breaks. The teacher recommended that I attended both before and after the breaks because usually students' behavior before the break was different from their behavior afterwards.

My role during classroom observations was of a nonparticipant observer (Creswell, 2003; Merriam, 2009). In these observations, the researcher has a passive role and does not take part in any of the activities he or she is observing. These observations were valuable to understand the actual uses of cell phones in the classroom while teacher and students interacted. I observed the classroom setting and its location, and what

resources the teacher had at hand in it. I also observed how the teacher and students (particularly those I interviewed) were using cell phones, and what cell phone features facilitated the effective implementation (or not) of an activity inside the classroom.

Moreover, I paid attention to whether the activities took place with the support (or not) of any basic technology available in the classroom, and how collaboration and participation took place among students and the teacher. I jotted down field notes to record these observations, at intervals in the classroom, and completed the notes immediately after finishing each observation. As soon as I had computer access I transferred the notes to a word document and when necessary added more details to expand upon what I observed in class.

Pre- and postinterviews. Qualitative interviews represent an important data collection technique, and are generally represented as conversations (Creswell, 2008; Kvale & Brinkmann, 2009; Rubin & Rubin, 1995). As Merriam (2009) stated, “Interviewing is necessary when we cannot observe behavior, feelings or how people interpret the world around them” (p. 88). In MALL research, interviews are key, as they allow the researcher to obtain data about the learner practices and perspectives on mobile device use for learning (Kukulska-Hulme, 2012). Observations allowed me to see how participants engaged in educational activities in the classroom, but not what activities they could implement outside the classroom, with or without teacher’s guidance. The format of the interviews was semistructured, with guiding questions that allowed me to probe further or follow up when necessary in order to gain more insight from the participants’ responses (Alvesson, 2011; Rubin & Rubin, 1995).

Thus, I conducted two semistructured interviews per participant to gather their report on the activities they were able to implement with their cell phones, either as homework assignments, or as informal learning activities. Additionally, these interviews allowed me to obtain participants' views on the possible uses of cell phones for learning purposes in various contexts (home, work, school), and eventually how they appropriated these devices for new uses.

In order to select participants for the interviews, I included an item soliciting volunteers in the last section of a prequestionnaire handed out to the students during the second meeting with the group. The item requested participants for two semistructured individual interviews, and seven students volunteered to participate. I conducted individual preinterviews with these students (Appendix A) during my second week of data collection, and conducted the postinterviews (Appendix B) with the same students at the end of the data collection cycle. The questions for the postinterview were modified after an analysis of preinterview data collected. I scheduled a preinterview with the teacher (Appendix C) during our first meeting, and a postinterview after the last week of classes of the cycle. I modified the teacher postinterview protocol (Appendix D) upon analyzing the teacher preinterview, several classroom observation field notes, and informal conversations held throughout the data collection stage.

In all cases, student interviews lasted between 15 and 30 minutes, while the teacher preinterview lasted 35 minutes and the postinterview lasted about 1 hour. All interviews took place after classes in the university campus. While I interviewed the teacher in English, students' interviews were in Spanish, to ensure they had a full

understanding of the questions and felt more confident to provide thorough responses to them (appendices contain a translated version of each student interview protocol). In order to build rapport and engage the participants, before beginning the recording, I started the interview by asking them about their reasons for studying English and any former interaction with the language. I briefly commented about my previous experience as a language student in the same settings where they were studying, and later as a teacher in the IEP. All the interviews were recorded with my cell phone audio recording feature, and then transferred the files to my computer, which was password protected.

After transcribing the interviews, I emailed the transcripts to each participant to confirm their responses and ask for clarifications on some answers. All of them confirmed their responses, and clarified what was necessary. I translated all interviews from Spanish into English, and to validate the accuracy of the translations, I requested the assistance of a peer debriefer who was familiar with the study, and was proficient in both languages. This same debriefer had also verified the accuracy of the Spanish version of the interview protocols before starting the data collection.

Informal conversations. I held informal talks with the interviewed students and the teacher when I visited the setting for classroom observations. The purpose of these conversations was to gather their thoughts and impressions on any particular event observed in class that could be relevant to the study and useful to formulate questions for the postquestionnaire and postinterviews. These conversations usually took place during class breaks or right after classes, but always at the convenience of the participants. As soon as practical, the content of these conversations was recorded in field notes.

Questionnaires. Having students' general perspective on the use of cell phones as educational tools was relevant to my research questions. I also needed to gather information regarding students' familiarity and access to technology in the class as a whole. Therefore I created a prequestionnaire and a postquestionnaire. I developed the questionnaires considering the information on literature about mobile devices' features (Matei, Faiola, Wheatley, & Altom, 2010), mobile device appropriation (Carroll et al., 2002; Jones & Isroff, 2007; Salovaara, 2006; Waycott, 2004), and learners' thoughts on mobile devices' appropriation (Kukulaska-Hulme, 2012). Some of the items were taken from an earlier version of the questionnaires developed for the pilot study conducted in 2013, and were modified to be adapted to this dissertation study.

Students completed the prequestionnaires the first week of the new cycle of classes, and the postquestionnaire was completed during the last week of the cycle's classes in July. Twenty-one out of the 23 students completed the prequestionnaire (see Appendix E), which I provided in Spanish. Like the student interviews, the Spanish version of the prequestionnaire was revised for accuracy by a bilingual peer reviewer. This prequestionnaire gathered information about students' basic demographics, technology access, and regular use of mobile devices in general. It also addressed students' cell phone ownership and familiarity with its features, as well as students' previous experiences with cell phone educational use. The postquestionnaire (Appendix F) was developed upon analyzing data collected through initial observations in the classroom, preinterviews and informal conversations. This questionnaire was more focused on the possibilities that cell phones offered students for in-class and homework

activities, as well as how they perceived the usefulness of the integration of cell phones in the activities for their learning.

Reflection journal. Reflection journals provide a valuable source for researchers to examine their own assumptions and beliefs about the topic under study, as well as to help perceive and reflect on their own biases during the research (Ortlipp, 2008). Thus, I kept a journal to document my reflections on the development of the data collection process. The reflection journal differed from the field notes in that the former addressed my preconceived ideas and anticipations of the topic and my personal reactions, as opposed to describing and interpreting the participants' experiences taking place in the field, primarily the classroom observations. In this way, I kept my preconceptions separate from the interpretations and analysis of the data collected.

Data Analysis

A characteristic of qualitative research is the analysis of the field data as it is collected in order to identify emerging themes. Qualitative data analysis can be analyzed in different ways (Creswell, 2008; Maxwell, 1996; Merriam, 2009). Using the research questions as guidelines, I started the analysis by examining the initial data collected through prequestionnaires and the preinterviews. Quantitative data can add insight, support and context to the qualitative data collected (Saldaña, 2011). Thus, I used descriptive statistics through percentage tables and bar charts to present the results for the close-ended items in the pre- and postquestionnaires. For the interviews, and observation and informal conversation field notes, I examined the data collected following the general steps as part of the *thematic analysis* process.

Thematic analysis “is a method for identifying, analyzing, and reporting patterns (themes) within data. It minimally organizes and describes your data set in (rich) detail” (Braun & Clarke, 2006, p. 6). For a more detailed approach in the data analysis, I followed the first and second cycle coding techniques suggested by Saldaña (2012). These techniques corresponded to the first cycle of data analysis, where the author recommends initial coding (Charmaz, as cited by Saldaña, 2012), and in vivo coding (Charmaz; Corbin & Strauss as cited by Saldaña, 2012). For the second cycle, I used focused coding to search for most repeated or significant codes to develop the themes (Charmaz, as cited by Saldaña, 2012). Table 3 presents an example of the data analysis iterative procedures.

Based on the literature on MHCI (Botha et al., 2010; Winters & Price, 2005), and previous research on mobile device appropriation (Carroll et al., 2002; Cook et al., 2008; Cook & Pachler, 2011; Jones & Isroff, 2007; Waycott, 2004), I considered the following aspects to identify the ideas for initial codes and emerging themes during data analysis.

- In what ways/how the teacher or her students used a given cell phone feature alone or with the assistance of any other resource
- The purpose of any formal or informal educational activity implemented with the assistance of cell phones inside or outside the classroom
- How participants perceived if activities with cell phone integration were useful/challenging in any way (compared to traditional approaches)
- Frequency of cell phone-assisted educational activities as reported by participants

Table 3

Data Thematic Analysis

Step	Details	Examples
1. Familiarizing with the data	Transcribe interviews Transcribe observation and informal conversation field notes Skim questionnaire open-ended responses	
2. Generating initial codes 1 st cycle	Read transcripts and field notes Identify Repeating words and phrases Recurring ideas Create codes	Initial codes from several data sources: Download Dropbox app on phone Recording themselves reading Share hotspot with students Cell phone won't die Dictionary app for pronunciation check Work in groups of 3 with one phone Listening to songs on teachers' phone
3. Searching for themes. 2 nd cycle	Identify dominant or most repeated codes Group recurrent patterns together Compare codes for potential themes across sources of data across subcases Collate into potential themes	Potential themes: <u>Information sharing tool</u> Share info with others Share folder with teacher in Dropbox <u>Communication tool</u> Communicate with peers and teacher in English Talk in English through WhatsApp <u>Collaboration tool</u> Collaboration among peers Social network groups to practice English Work in groups with one phone
4. Reviewing themes	Revisit coding process Continue data reduction Identify most relevant themes to research questions	
5. Defining and naming themes	Refine, define, and name (or rename) most relevant themes	Final Theme: <u>Cell phone as collaboration tool</u> Collaboration among peers Social network groups to practice English Share material with others in Dropbox Work in groups with one phone

- When and where these activities took place (during class, as homework, at home, work, commuting)
- How cell phone educational use influenced or was influenced by the immediate environment (other technology in the classroom, the physical setting), how cell phone integration conditioned students' interaction among themselves and the teacher inside and outside the classroom.
- Limitations and opportunities in the learning setting that influenced the activities
- My anticipated perceptions compared with the actual use of cell phones in the instruction

Throughout the different phases of the data analysis, I examined the teacher and student interview transcripts for codes that informed or described the details above, and compared them with classroom observation notes, responses from the questions in the questionnaires, and thoughts from my researcher journal. I collated codes into categories or themes addressing each research question, and I named them to represent the ways in which participants appropriated their cell phones. That is, these themes were named based on the participants' educational purpose for the activity or activities implemented with the support of any cell phone feature.

Trustworthiness

Qualitative researchers utilize various validation strategies to make their studies credible and rigorous (Creswell, 2003, 2012; Merriam, 2009; Yin, 2014). I ensured the

trustworthiness of the data collection and analysis in this study with the use of validation strategies of triangulation, researcher reflexivity, thick-rich (detailed) description, member checking and peer debriefing (Merriam, 2009). Triangulation was achieved by using several data sources and data collection techniques to ensure the validity and accuracy of emerging findings and eventually the conclusions of this research study (Creswell, 2012; Merriam, 2009; Yin, 2014). Triangulation took place by comparing findings across the different data collected in this study (pre- and postquestionnaires, semistructured interviews, informal conversations, observation field notes and other documents). I aimed to achieve rich description of the cases by providing a detail account of the data collection and analysis, as well as presenting the participants' voices under each theme. In addition, I went back to participants with interviews transcripts and initial interpretations to corroborate that their thoughts were accurately put into paper, and that my understanding of their views was accurate.

Finally, including other people like colleagues and peers in the study is important to corroborate the validity of my findings. As said in earlier sections, a bilingual student, familiar with the study, assisted me in validating the documents I translated from English to Spanish and vice versa for data collection and analysis. I also requested assistance from colleagues and professors familiar with the qualitative research process to discuss the agreement between the data collected, my interpretations, and the emerging themes.

Ethical Considerations

This dissertation study went through the process of the Utah State University

(USU) Institutional Review Board (IRB) for approval. This process ensured that the ethical components of the research study were fulfilled, and participants' confidentiality and privacy were protected. I went through several steps to obtain the corresponding permission to conduct the study in the Dominican Republic. I first requested the written approval from the Minister of Higher Education in the country (Appendix G), as well as the consent of the IEP Director, as they were the appointed authorities who could grant the permission to conduct research at a higher education level in public institutions. Once I obtained their authorization, I needed the consent of the coordinator at the local IEP center where I was going to collect data. After all needed approval was granted, I had access to the teacher and the students.

The letter of information for the teacher was in English (Appendix H), but students' were in both English and Spanish (Appendix I) to make sure they understood their rights as participants and the purpose of my study. Participation in the study was voluntary for the teacher and students, and there was no penalty for refusing to participate. I informed participants the purpose of my research by explaining the procedures to follow and the types of information that I planned to collect. Participants' identity was protected, and to keep the confidentiality of the data collected I removed all identifying information from the interview transcripts, assigned an identifier and/or pseudonym to each participant, and did not refer to personal information that might have invaded participants' privacy. I also gave all participants my contact information (e-mail address and phone numbers) to reach me for questions regarding the research study.

CHAPTER IV

FINDINGS

Introduction

The purpose of this dissertation study was to investigate how a Dominican English language teacher and her students appropriated cell phones for language learning purposes inside and outside the classroom. The study also investigated which cell phone features enabled the participants to appropriate these mobile devices for the different educational activities implemented. Chapter IV reports on the study's findings following the methods outlined in Chapter III. This case study involved an English language teacher and a class of 23 students of a low to middle socioeconomic status in an intensive English program in the Dominican Republic.

I collected data through semistructured interviews, classroom observations, informal conversations and questionnaires. A prequestionnaire provided a general view on students' mobile technology ownership and access, as well as previous experiences with cell phones as educational tools for English language learning. A postquestionnaire provided an overall perspective on how the teacher and students appropriated cell phones for language learning purposes, as well as students' general perceptions on the appropriation of these mobile devices as learning tools. For a more in-depth analysis of individual cell phone appropriation, this case study focused on five subcases or embedded units (Yin, 2014), consisting of the teacher and four of the seven students that participated in the semistructured interviews. These students were selected based upon

their reports of unique ways of cell phone feature use for educational activities. In addition, these students were the most responsive for member-checking preliminary interpretations of their responses.

The thematic analysis proposed by Braun and Clarke (2006) were used to identify emerging themes in appropriation, utilizing Saldaña's first cycle of analysis (initial and in-vivo coding), and the second cycle of analysis (focused coding; Charmaz as cited in Saldaña, 2012). The following two research questions guided the data analysis for this dissertation study.

1. How has a Dominican English language teacher appropriated cell phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

2. How has a group of Dominican English language students appropriated cell phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

Based on Mobile Human Computer Interaction (MHCI) approaches to appropriation in mobile learning, I looked for ideas and patterns to create codes that described, for example, how participants used one or more cell phone features to perform educational activities inside or outside the classroom, the purpose of such activities, and if participants perceived it as useful in any way. Data analysis identified several emerging themes of how the participants appropriated different cell phone features for homework assignments, and for students' personal and informal learning purposes. I named the themes addressing each research question based on the educational intention of the

activity or activities implemented with the support of any cell phone feature.

This section presents findings about the research questions through themes that described how participants appropriated their cell phone to implement educational activities, sometimes with the assistance of other resources. For research question one, I provide a general description of the teacher participant's background and experience with technology. Next, according to the teacher's statements, I describe her cell phone appropriation and the role of context in the process. Then, I present the themes identified in the data analysis, describing in which ways the teacher adopted cell phones, the purpose of this appropriation, and which features in these mobile devices enabled the new adoption.

For research question two, I selected four subcases to represent the findings on how these students in particular appropriated their own cell phones for language learning purposes, as well as what type of appropriation was common among all student participants.

Research Question 1: Teacher Appropriation of Cell Phones

This research study focused on the educational opportunities that cell phones provided to the participants, and Question 1 addressed how the teacher participant took advantage of these opportunities. Findings in this section are based on the themes that emerged from the preinterview and postinterview, as well as several informal conversations held with the teacher. In addition, classroom observations and students' statements supported these findings. Also, to present the participant's own voice in this

section, I included quotes from the teacher's interviews, which were conducted in English, as stated in Chapter III. Since I transcribed the interviews using the teacher's exact same words, some quotes may present minor spelling and grammatical mistakes resulting from the colloquial and informal way in which the interviews took place.

The teacher participant had worked in English language institutes for more than 5 years, teaching children and adults. She had recently obtained a bachelor's degree with an emphasis in teaching English with technology. In terms of technology ownership and access, the teacher had an iPhone 5s with a postpaid plan including mobile data. In addition, she owned an iPad and a laptop, and had access to a Wi-Fi network at home. Her morning job also required that she worked with computers with Internet access, thus she appeared to be a connected teacher, and defined herself as "pro-technology." That is, she supported the integration of different type of technologies into classroom instruction, and was particularly enthusiastic in promoting the educational use of cell phones among her students. Due to these factors and the teacher's prior experience facilitated her appropriation of cell phone features, and shaped their use for instructional purposes.

Teacher Cell phone Appropriation

Mobile technologies were not new to the teacher participant, as she owned an iPhone 5S and an iPad with which she was already familiar and mastered their different features. However, the teacher was new to the classroom, and new to the class. During the preinterview, she stated that before thinking about cell phone integration in her teaching, she needed to examine the resources available and the limitations in her new classroom. She also needed to learn about students' ownership and familiarity with

mobile technologies, as well as how comfortable they felt using cell phones, and their extent of internet access.

I will need to see how comfortable they would feel with technology, and if I can help them see this technology (cell phones) as something educational and helpful...the first thing I need to find right now is, whether they are comfortable around technology. I don't really have Internet access in the building. So that would be a tricky thing if they don't have Internet on the phone, or, if they have Internet connection at home, they can download dictionaries and do things out. I think tomorrow it would be more of testing and trial to see where we're at with technology whatsoever. That doesn't mean that I'm not going to use projectors, or laptops, or even my own iPad if I have to, and the radio, but to see what they personally have in hand. (Preinterview)

The teacher indicated that the extent of cell phone integration depended upon some factors associated with both the physical and the social contexts where the instruction was going to take place. First, she mentioned that the building did not have Wi-Fi connections, which posed the first limitation in the classroom. Second, she added that students having or not having Internet on their own cell phones, or at home, or even having a cell phone at all, was directly related to students' social and economic background.

About 2 weeks after our preinterview, the teacher said she already learned that all students had cell phones, and knew which ones had smartphones and which ones had regular cell phones. She added that she had started thinking of activities that could be implemented using cell phones, with any additional resources when needed, and tried some of those activities with her students. Furthermore, after searching secure complementary resources, she downloaded a Dropbox app to her cell phone, and explored other resources online that she could use to support different activities in her instruction that involved cell phones.

I made sure that this platform (Dropbox) that I would use was a 100 percent secure. I took my time, because you have to make sure you're using a good platform. So in that way, it could have been a little bit tricky. They were going to record directly on their phones and upload it to Dropbox. I trust Dropbox. I've been using it for a while now. (Postinterview)

Teachers at this center followed a master lesson plan, sent from the sponsoring government institution. Once the teacher examined different opportunities that the features in her cell phone provided for the implementation of different activities for her students, she modified her lesson plans accordingly. Major themes emerged from the data analysis indicated that the teacher appropriated cell phones to implement in-class and homework activities in several ways, by considering how the features in these technologies facilitated her instruction and students' learning within the limitations of her classroom. This facilitation could be directly related to pedagogical purposes (enhancing meaningful learning and improving language skills), or complementary uses that enabled the accomplishment of these purposes. For the pedagogical uses, I created codes that were compiled into the following themes in cell phone appropriation: *connectivity tool*, *content delivery tool*, *research and reference tool*, *assessment facilitation tool*, and *collaboration tool*. For the complementary uses, codes in the data analysis indicated two themes or categories: *time-management tool* and *emergency power back-up tool*.

Themes

Connectivity tool. The lack of a Wi-Fi connection in the classroom prevented the use of cell phones for certain activities that required Internet, such as just-in-time access to information when there was a need for clarification, or to motivate students' own interpretation of certain topics they discussed. In the preinterview, the teacher indicated

that her iPhone 5S was on a postpaid plan that included data. Thus, she appropriated her mobile device as a connectivity tool by using the hotspot feature, which enabled students to have data, and increased access to search for class-related information, as it was noted in the classroom observation, and confirmed during the postinterview.

Like you could see some of them did have Internet connection, they had Internet access, but they didn't want to spend it in class, because that was their money. So we would share my hotspot with them. I would group them and would share it because there would always be at least one willing to do it. (Postinterview)

Content-delivery tool. As stated earlier, the amount of radios available in the institution was limited, and at times the teacher would not be able to get one for her class. The radios were needed to play the textbook CD that contained the listening exercises. Plus, power-cuts occurred unexpectedly, disrupting the pace of the class. These factors drove the teacher to find an alternative to meet the learning goal in mind. To address this issue she converted the textbook CD tracks into mp3 files, which she uploaded to the class Dropbox account for student access, and also played them through her cell phone audio playback feature.

We have a problem here with radios, we don't have enough. So I would upload to the Dropbox folder the audio files for the book we are working with to play it directly from my cell phone with a little boom box, like a speaker that I bought, a portable one. It's small, so it's comfortable, so I have no excuse not to play it (the textbook CD). (Postinterview)

Another example of cell phone as content-delivery tool was its use to play songs in English for the implementation of fill-in-the gap activities to develop students' listening comprehension skills, and learning phrasal verbs in context. To achieve this, the teacher indicated she selected lyrics of contemporary songs that students were familiar with, and played them through the music player feature, or the YouTube app on her

phone. This activity was one of the most implemented, which was confirmed with students and classroom observations.

I did a lot of fill in the gap (activities) with lyrics because they (students) were introduced to phrasal verbs, and that's one of their favorite activities. And that allowed me to do this in the right context, how to draw the different meanings a phrasal verb could have according to the way or how you are applying it, right? (Postinterview)

Student participant: besides learning to better listen in context (with the fill-in-the gap activity), we learn some phrasal verbs... Sometimes, she teaches us the way we can use (phrasal verbs) in the street. Because sometimes the textbook says one thing and people say a different one in the streets, she wants us to learn both things. So that we have a better knowledge when we speak English out in the streets. That is why I think (the activity) is very good because in that way we learn to listen in English. (Postinterview)

In the first quote above, the teacher provided a reason for her choosing to do these activities. The student participant in the second quote supported the teacher's statement. He indicated how the fill-in-the gap activity helped him understand the meaning of phrasal verbs out of the textbook and into real world applications. A social characteristic of this activity is that the teacher took into account the students' music habits, by selecting songs they were used to listen to for recreation. For instance, in one of the classes I observed, the teacher was addressing the phrasal verbs *turn up*, *turn down* and *turn back*. Instead of using the exercises in the textbook and workbook, she picked a few popular songs that presented these phrasal verbs in a more informal and colloquial context. She played excerpts of "Turn up the Music," by Chris Brown, "Turn down for what," by Dj Snake, and "Turn back Time" by Cher. The phrasal verbs in these songs presented a more every day, conversational applications. Besides, selecting these type of songs allowed the teacher to catch and keep students' interest to learn new words.

Research and reference tool. The teacher reported during our informal conversations that sometimes she was not sure of the meaning of some words, phrases, or grammatical patterns, and acknowledged that she did not always have the answers to students' inquiries. She, therefore, took advantage of her cell phone and used Google Search on her browser to clarify her own and students' questions. She had a paperback dictionary, but also had a dictionary app that students without smartphones could use when working on some exercises. Besides using her own phone to search for topics online and in dictionary apps, the teacher additionally encouraged her students to use the offline dictionary apps to look up pronunciation and meaning in context for unknown words without the need of Internet.

Sometimes, even if you're the teacher you do not always know everything. So I always try to double-check or say "hey let's go pull out your dictionary English to English, and verify what it means." (Preinterview)

One (activity) that I suggested but that I didn't directly assigned was them looking up words in their dictionaries in the cell phones, if they didn't know the appropriate intonation or pronunciation of the word, they would listen to it or look it up. (Postinterview)

Collaboration tool. Data collected from the informal conversations and the postinterview showed that another way the teacher took advantage of her students' own cell phones was uploading supplementary files to the Dropbox account, and encouraging students to share any additional educational material that could be useful to their peers. These included grammar cheat-sheets, lists of phrasal verbs, and videos about English pronunciation. The assistance of this online resource facilitated teacher and students' collaboration across locations.

She added in our conversations, and confirmed in the post interview, that she also

adopted cell phones as collaboration tools through group activities in the classroom, with or without Internet access. She would group or pair students to report on previously assigned tasks, or she would implement an activity in which they used cell phone content and related it to a topic addressed in class.

They had to randomly select a picture on their phone, one that they felt comfortable showing, it could be an object or a “selfie.” Then were divided into groups of 3 and they would compare each other’s picture. Which one was smaller? The most creative or whatever, looking for similarities and differences. (Postinterview)

The teacher would pair or group the students, and have them use only one cell phone to make the Internet connection more efficient when she shared her mobile hotspot. In this way, students with no smartphones teamed up with those who had. For instance, as a warm-up activity, the teacher wrote on the board a popular saying, or an idiom, and had students brainstorm possible meanings before looking up on their phones. Then, in pairs or small groups students discussed in the target language their findings from the phone, and the teacher made sure everybody participated.

Assessment facilitation tool. The teacher indicated that providing individual assessment and feedback to students was challenging, due to the limited amount of time in class to address each student, and the fast pace of the classes in general. The teacher indicated in several conversations and in the postinterview that she implemented activities, with the assistance of the audio-recording feature in her students’ cell phones and Dropbox, to facilitate student assessment on reading and pronunciation. For example, the teacher assigned students to record themselves with their cell phones having a conversation in English about their likes for different types of music, and the type of

emotions related to them. This was an exercise from a topic addressed in one of the textbook units, but the teacher had students bring their own experiences and interests into the classroom. Students uploaded audio files of their recordings to the class Dropbox account from their cell phones or a computer. The teacher had the flexibility to access these files from her cell phone or her computer, or even to listen to them straight from students' mobile devices. The opportunity to capture students' conversations by recording them through cell phones allowed her to appropriate these devices as assessment facilitation tools.

It was impossible for me to see, I mean to target each and every one of them. So that was genius, that was one of my favorite personally, that they can take advantage of their mobile phone in a way that they don't need Internet for it. Some of them were not able to upload them to Dropbox, so they just brought me their cell phones, and during break I would listen to it. That is perfect!
(Postinterview)

I could check on their individual work at different times. I could have them listen to their own mistakes as it was recorded. So it was good for feedback for themselves and for others. I would also have them listen to each other's recording and tell what they did wrong on this or that." That could be tricky, like I told you, they trust each other. I made sure I put them up with people that they did know. If I wouldn't have had the recording, then I would have lost the moment of correcting them.... Besides, if a student wanted to know why he or she was evaluated this way or the other, I have evidence. Everything was recorded. It's not based on what I think or what I heard. They can listen by themselves, it's recorded, and they can verify that. (Postinterview/Informal conversations)

As the teacher stated in these quotes, the appropriation of cell phones as assessment facilitation tools, enabled her to help develop students listening comprehension and speaking skills, and provide individual assessment on this objective. The recording activities also motivated students to assess themselves and their peers, and provided evidence to the teacher to validate the feedback given to students.

Time-management tool. Working in an intensive English language program demands, as the name indicates, an accelerated pace in the instruction. In our conversations, the teacher always pointed out that she needed to make sure she spent only a specific amount of time on each aspect of the day's lesson, including group and individual activities. During classroom observations, I noticed there was no clock in the classroom. She used the timer in the clock function to time students' work on book exercises and other activities, thus appropriating her device as a tool for better time-management in her classroom activities. She would also randomly ask students to check their phones and tell her the time in English.

In our informal conversations and the postinterview, the teacher repeated that activities done with cell phones were time-saving in several ways, for both her and the students: "*it saved me time,*" "*saved time when grading*" "*they could work faster on assignments.*" Referring back to the teacher's quotes above, she mentioned that planning activities using cell phones not only saved her time in the implementation of activities, but also in student assessment. In other words, as she was on a tight schedule, it was challenging to meet individual students' learning needs, especially in their oral performance. Complementing the use of cell phones with online resources, like *Survey Any Place* (<https://surveyanyplace.com>), allowed the teacher to assess students in a shorter amount of time.

I found a great resource that is called survey anyplace and it could take a while, like I said, to actually set up the test.... So, in a way even though it was a little bit of sacrifice for me, it was like a plus in another way because they got the results right away, they didn't have to wait for me to take 23 sheets home to correct them 1 by 1. It was something for them productive at that time being, so in that way it was good. (Postinterview)

The time the teacher spent setting up the quizzes was compensated with the time she saved in assessment because *Survey Any Place* provided the feedback to students. Although not all students completed the quizzes on their cell phones, this activity represented an innovative way to take students outside the traditional paper-based assessment, and obtain immediate feedback.

Emergency power back-up tool. Several limitations in this classroom have already been highlighted, but in our chats and during the postinterview, the teacher pointed out other useful aspects of her cell phone for her teaching, enabled by the long battery life and flashlight feature in her iPhone 5S. Blackouts are common across the Dominican Republic, and this English center was not an exception. Although the classroom was in an illuminated location, and classes took place in the afternoon, on some rainy days they would have blackouts that would make the instruction delivery difficult. The teacher and a few students used the cell phone flashlight feature to provide the illumination needed to complete their tasks, in addition to the already mentioned content-delivery functionality of these mobile devices.

Just as the (lack of) radios situation, it's the same as when you have blackouts. My cell phone wouldn't die out. It's like I plug in my speakers and you're ready to go. You don't have any disruption. You know what I mean? And it never got too dark thanks God, as if it would rain and we got a black out at the same time, I have a flashlight, and most of them do to. (Postinterview/Informal conversations)

As seen above, the teacher took advantage of cell phones to provide students with a better language learning experience. The first five ways in which the teacher appropriated cell phones were supported with the last two, which were not inherently pedagogical, but facilitated the teacher instruction. Table 4 presents a summary of the

teacher's findings, with the features and its properties that enabled the educational appropriation of cell phones. Table 4 also lists the emerging themes, with sample codes along with their data source.

Table 4

Teacher Appropriation of Cell Phones

Function/feature	Enabled	Theme identified	Sample codes	Data source
Pedagogical use				
Hotspot	Increased data access	Connectivity tool	Smartphone with unlimited data Share hotspots with students	Postinterview Classroom observation Informal conversations
Audio-recording/playback	Rich-media capturing	Assessment facilitation tool	Listen to their own mistakes Provide feedback on pronunciation mistakes	Postinterview Classroom observation Informal conversations
Audio playback/music player Youtube app	Rich-media playback	Content delivery tool	play CD content on phone plug speakers on phone Play exercises directly from cell phone	Postinterview Classroom observation Informal conversations
Dictionary app Mobile web browser	Increased information access	Research & Reference tool	Teacher doesn't know everything Use dictionary to check-up	Pre/Postinterview Classroom observation Informal conversations
Mobile web browser Dropbox	File sharing & storing	Collaboration tool	Work in groups Share one phone in small group activities Sharing material with Dropbox app	Postinterview Classroom observation Informal conversations
Complementary use				
Clock	Efficiency/time control	Time-management tool	Saves time Activities completed faster	Postinterview Classroom observation Informal conversations
Battery power Flashlight	Power source/Illumination	Emergency power back-up tool	Plug my speakers I have a flashlight in it	Postinterview Informal conversations

The teacher's use of cell phones in her instruction was constrained by the physical context where the instruction was taking place. Several factors related to the contexts where the activities occurred, such as the lack of radios, no Wi-Fi access, limited smartphones with mobile data, determined how the teacher decided to appropriate cell phones to achieve the educational objectives. The teacher considered all of these factors, and adapted different cell phone features to meet the students' learning needs.

Besides the physical limitations faced in the classroom setting, the teacher also faced other challenges for cell phone integration related to social factors. She acknowledged that distraction was one of the main reasons for which cell phones were banned from the classroom, not only in that English center but also in others.

Honestly, truth to be told, distraction, it happens. You're not going to stop using pencils in classrooms because they (students) get distracted, or because they start smuggling things in their nostrils. Because let me tell you something, truth be told you happen to have your classroom with no Internet access, with no cell phones allowed, which is rubbish, they're going to sneak them in regardless. So you might as well use them in a positive way to enhance their teaching. The thing is, like I was saying before, you're not going to take away their pencils because they are being distracted with them. You're not going to cut their hair off because they're not paying attention. You're not going to close the windows or put curtains because they're looking outside the windows. Like seriously, you need to use those things to your advantage. (Postinterview)

Besides distraction, the threat to students and teachers' privacy was a concern, as she articulated during the postinterview, "*anybody can shoot a picture when you're not even looking, and that picture can take you into trouble.*" Still, she stated to have the conviction that it depended on her classroom management strategies, and she should have the control to create the learning environment when working with cell phones. From the first day of classes, she set up guidelines for proper cell phone etiquette in the classroom,

and allowed students to have their cell phones at hand and use them as needed, provided that they were doing something educational. Likewise, she indicated there were consequences for misuse, as she monitored students' behavior while using their mobile devices.

Some of my students have their mobile phones on top of their desks. Never did they go into social media, or if we were doing something they'd say "sorry, I really need to text back this person." So I build that [trust] with them. I'm not here to waste my time. So if you're disrespectful with me, it's going to have a consequence. I believe you [students] are adults, I'm treating you as one. The moment I see you behaving like a kid, that's the treatment you're going to get from me. I told them and they saw from the very beginning that even though I'm not looking at them, I'm looking at what they're doing. (Postinterview)

Despite the teacher's point of view on cell phones as educational tools and her determination to integrate them, the norms established by the administration about banning cell phones in the classroom were a challenge to overcome. The teacher managed to have the consent to let students use their cell phones in the classroom, but admitted she could have achieved more in terms of cell phone educational use. She felt that at the beginning there was some reluctance from the center administration in allowing the integration of cell phones in her instruction.

I think my only concern would be how much support the institution per se would have for the cell phone implementation. Because everything looks pretty, but it's a challenge. I'm up for it, I'm up for the challenge I have ahead of me. (Preinterview)

At the very beginning (a challenge was) the reluctance of the center itself. The reluctance in allowing me doing it. I think that's the first and most important, like if you don't have support from your coordinator or your superiors, it's going to be an uphill battle. Sometimes you have to decide if it's worth fighting or not. For me, I decided it was worth it. (Postinterview)

The teacher's thoughts about the administration's view on using cell phone in the

classroom were similar to some of my anticipated conjectures about the administration willingness to collaborate. I documented in my researcher journal these ideas before my first visit with the coordinator at the center: *“Skepticism could be the first reason of not promoting cell phone integration in the classroom. Even when the teachers are interested, barriers are placed from the top of hierarchy.”* Since an open integration of mobile devices is not common in Dominican educational settings, the stakeholders’ skeptic posture to my proposal were understandable to a certain degree.

The teacher participant concluded that for teachers and students to be comfortable appropriating cell phones as learning tools, more support from the administration was needed. She added that she shared ideas with other teachers who were interested in integrating cell phones in their classes, but had little or no expertise. Thus, the teacher felt that the administration also should provide support through training to teachers who want to design activities where they can take advantages of cell phones as learning tools.

You need to use those things that they have at hand at your favor, not against you. So, I wish that we can get some kind of training, official training here in the Dominican Republic, because here again, I think there are so many resources that we don’t have available in the country, or we do have but we don’t know of.

Students’ findings in general, reflected and supported those obtained from the teacher’s data regarding cell phone appropriation and perceptions on the use of this mobile device as a learning tool.

Research Question 2: Student Appropriation of Cell Phones

Students appropriated their cell phones as learning tools inside and outside the English language classroom, with the teacher’s assistance and at their own initiative.

Findings in this section are drawn from pre- and postquestionnaires and classroom observations, which provided a general view of how students expected to appropriate, and appropriated their cell phones for educational purposes. The emerging themes described in the four student subcases resulted from codes identified mainly in the pre- and postinterviews, and informal conversations with the participants represented in each subcase. Common cell phone appropriation among all student participants was obtained by comparing similar uses across interview and field notes data, and the responses provided in the pre- and postquestionnaires.

General Findings from Prequestionnaires

The student prequestionnaire consisted of three sections. The first section collected students' basic demographic information. The second section included questions about students' ownership and use of mobile technologies in general, and the previous or potential use of these devices for language learning purposes. The last section included two open-ended questions about students' opinion of cell phone use for learning activities. Twenty-one out of the 23 students in class completed and returned the prequestionnaires.

The responses provided to the first section of the prequestionnaire showed that 14 students were between 18 and 20 years old and 6 were between 21 and 25 years old. Responses also showed that seven student participants were male and 14 were female. Participants responded that they were at different educational levels (Table 5), with 4 students attending private universities, and 15 students attending the state university.

Table 5

Student Participants' Educational Level

Educational level	<i>n</i>	%
Freshman (1st year)	4	19%
Sophomore (2nd year)	5	23%
Junior (3rd year)	8	38%
Senior (4th year)	3	14%
Graduated	1	5%

Analyses of the prequestionnaires indicated that all these students owned cell phones. Eighteen students used smartphones, while four students used regular cell phones. Three of the students who reported having smartphones, also included having regular cell phones (Figure 2). I later learned from the participants that having both types of mobile devices was not uncommon, because some students upgraded from a regular cell phone to a smartphone and decided to keep their old device active until they got familiar with the new one.

In addition, students reported they mostly used prepaid cards for calls and texts, with only three students reporting having postpaid plans. Students accessed the Internet through their cell phones in several ways, mainly from Wi-Fi connections, particularly at home (Figure 3).

Findings also indicated that the features most commonly used among students were messaging, picture camera, Internet browser, social networking apps, and music player. The less commonly used features were the audio recording, PDF reader, GPS, and educational apps. Regarding students' previous experiences in using their cell phones for

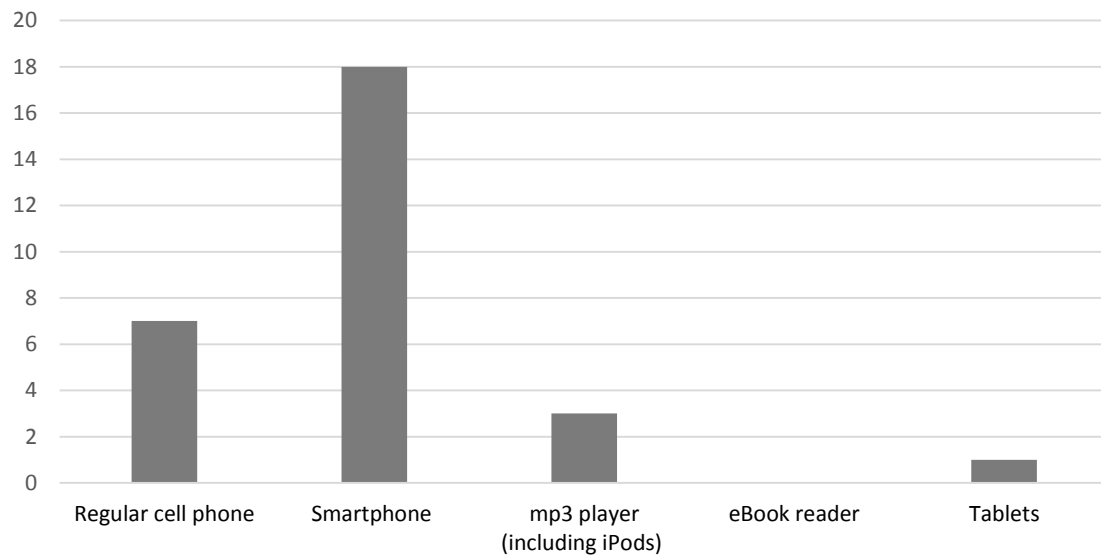


Figure 2. Mobile technology ownership among student participants.

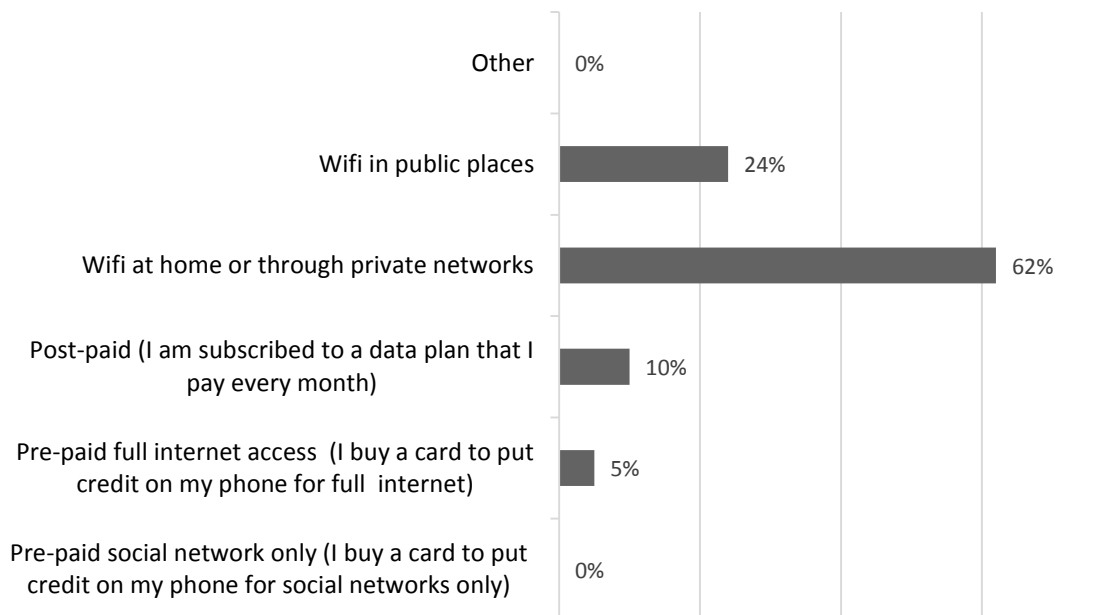


Figure 3. Student mobile internet access.

English language learning purposes, Table 6 shows that the majority of students indicated that the frequency of cell phone use in the EFL classroom, initiated by the teacher was minimal, whereas the personal use for learning was more common. Also, most students presented negative views on potential integration of cell phones for teacher-guided activities, while being more positive on using these mobile devices on their own.

Responses to the open-ended questions indicated that students would be willing to use cell phones inside the classroom mainly for collaboration, searching information, and looking up of word meanings. Outside the classroom, the common theme was that using

Table 6

Student Previous Experience and Potential Use of Cell Phones for Language Learning

Item	Never		Rarely		Sometimes		Often		Daily/almost daily	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
In my English language classes, I have participated in learning activities that involved the use of cell phones in real world application activities.	11	52	8	38	2	10	0	0	0	0
At least one of my English teacher have promoted, monitored, and modeled the ethical use of cell phones in their classrooms for learning purposes	5	27	2	11	7	39	3	16	1	6
I have used my cell phone outside the classroom to learn and practice English on my own initiative	0	0	3	16	0	0	9	47	7	37
I am likely to use my cell phone when I am outside the classroom to collaborate with other students, and/or research topics of personal interest related with the English language.	1	5	1	5	9	47	6	31	2	10
I am likely to participate in teacher-guided activities in the classroom where I can use my cell phone	9	45	5	25	5	25	1	5	0	0

cell phones would allow for more opportunities to access and practice the target language (see Appendix J for English version of student responses).

General Findings from Postquestionnaires

The postquestionnaire was completed by 20 of the 23 students on the last day of classes corresponding to the 7-week cycle in which I was collecting data. This questionnaire consisted of three sections that were developed based on the data collected during classroom observations and conversations with the teacher and student participants. The first section addressed the frequency that students implemented educational activities for English language learning with the assistance of cell phone features. Findings on this section will be presented later in this chapter. The second section addressed students' perceptions on cell phone appropriation and integration into classroom and personal learning activities. Results from this section showed that student participants' perceptions on the educational appropriation of cell phones during this cycle were positive in general. Most respondents agreed that using cell phones to complement classroom instruction was helpful and provided more opportunities for learning. Only about 15% were neutral in their perceptions, and 5% disagreed with the statements, but the postquestionnaire did not document comments as to why these students disagreed. Appendix K presents a table summarizing the results of this section.

As seen earlier in Table 6, most students' expectations on the integration of cell phones as tools for teacher-guided activities were initially neutral to negative. However, responses to the open questions in the third section of the postquestionnaire showed that students' perceptions changed throughout the course of the study. This last section

included four open ended questions to collect students' thoughts on which teacher-directed activities they found more and less useful, as well as the benefits and challenges of cell phones as learning tools. Most students responded that out of the activities implemented by the teacher in the classroom, the fill-in-the-blank listening activity with phrasal verbs, and activities complemented with the Dropbox app, were the most useful. As for the less useful activities, two students stated that some listening activities were not useful, two other students indicated that the dictionary app provided very complicated definitions, and two said that accessing websites from the cell phone browser was difficult.

The remaining 14 students said they found all activities were useful. Responses to the last two questions showed that on the one hand, in terms of advantages, cell phones allowed student participants to increase their English language knowledge, learn vocabulary in context, improve pronunciation, and made learning easier and more comfortable. On the other hand, no Internet access in the building and not everyone owning a smartphone were the two main disadvantages mentioned, while only one student mentioned distraction as a disadvantage.

Student Subcases of Cell phone Appropriation

As stated at the beginning of this chapter, the selection of four subcases (embedded units) for this case study highlighted individual ways on how these students appropriated cell phones for language educational activities. The information describing students' educational level, as well as their ownership and use of cell phone was drawn

from questions during the individual preinterview with each of them. For confidentiality purposes, I used pseudonyms for each student.

Subcase 2: Luis

Luis was one of the oldest students in the group, and had recently graduated with a major in Advertising at the state university. According to his responses in the preinterview, unlike most students in the class, he owned a regular cell phone (Motorola V3), an iPod touch (unspecified generation), and an Android smartphone (Samsung Galaxy Indulge) that he rarely used for learning purposes. He stated that he used his iPod as a cell phone, and he could do almost everything he did with a smartphone, except for texts and phone calls, for which he had the regular phone.

Luis' cell phone appropriation. Luis' smartphone was factory locked and could not be activated with local telephone companies for calls or texts. This constraint prevented Luis from using his smartphone more frequently in his daily activities. As most of the features in the smartphone were similar to those in his iPod, he found out that both devices had same functionalities. Basic features in a smartphone consist of a built-in web-browser, an operating system, voice and video recording, Wi-Fi connection capability, and native Apps download capability.

Luis adopted the features in his iPod along with the regular cell phone's features to complete different tasks in everyday situations, replacing the role that a smartphone usually played in those situations. Based on the new uses adopted, he modified the ways in which he engaged in different social practices, including activities for language learning.

Theme: iPod as a cell phone. In our conversations, Luis referred to his iPod as a cell phone, and when I asked for clarifications, he would say that is how he saw it. He perceived the features in this mobile device were for more than entertainment. He used its different functions for educational purposes, since he used the web browser to do research for the English class, used the audio recorder for learning purposes, and downloaded a dictionary app to assist his learning.

I have an iPod touch that would be like a smartphone, just that I can't take phone calls (preinterview)

My iPod is like a cell phone, but without the calls, that's why I have a regular phone. I have an Android (phone), but I rarely use it. I only use it for WhatsApp, which doesn't work in the iPod. But I don't use it for anything else. (Preinterview)

Luis indicated that throughout the cycle he appropriated his iPod for most of the activities that required cell phone use, including voice recording, and taking pictures of notes. His favorite activity was using it for research, by connecting to the Internet whenever Wi-Fi was available to search for topics as assignments, or addressed by the teacher in class. He would usually refer to his iPod as a cell phone when talking about its use for learning purposes.

We had some class presentations that were assigned as extra credit because they were not part of the program but were requested by the coordinator. Thus, to reinforce the research we were doing, we looked up any additional info that we could find using our cell phones. (Postinterview)

Subcase 3: Alba

Alba was a third-year medical student at the state university. During the preinterview, she informed me that she had a Samsung Galaxy Ace with a talk and text

prepaid plan, and used Wi-Fi networks mainly at home to connect to the Internet. I noted during classroom observations and informal conversations that Alba was one of the most active and enthusiastic cell phone users for learning in the classroom.

Alba's cell phone appropriation. Alba took advantage of her smartphone's different features and appropriated it as a learning tool in several ways to achieve her language learning objectives. Alba indicated that she took her cell phone anywhere, and could use it everywhere at home connected to the Internet, which facilitated her access to learning resources on her cell phone. She added that as per recommendation of the teacher, she started using the audio recorder on her phone to complete homework assignments, and later to check on her pronunciation. Alba also opted for using her cell phone instead of the laptop to complete her English class assignments, and eventually modified her traditional learning patterns by using her cell phone for most of her tasks.

I did almost everything using the cell phone. Well, I did everything with the cell phone because I never had to use the pc. I could though, but it was easier with the cell phone. (Postinterview)

Alba said that she could work on most assignments and other educational activities straight from her cell phone, as its small size enabled mobility and portability, and provided her with flexibility and comfort to complete tasks in different places.

Theme: Assessment and feedback facilitation tool. Making use of the resources available on the Internet, the teacher used the website *Survey Any Place* to set up quizzes that students could complete either on a computer or their cell phones (via web or app). As Alba discussed in her postinterview, she opted for the second option, and accessed the website through the mobile browser on her phone, which allowed her to complete the

quizzes at her own convenience.

We worked on some quizzes. I mean, the teacher created them. It was an Internet webpage, then we had, well you could do it from the cell phone. And that was genius because you could do the exam there and it was easier. It was with Internet obviously, but it's faster, you can do it in a bit... (It was) super easy, it also provided the score, you could see right there, and you knew if you made mistakes. (Postinterview)

Theme: Self-assessment facilitation tool. As stated earlier, the teacher took advantage of the audio-recording feature to capture students' words and assess their speaking and reading skills. But also, Alba, like some other students, appropriated this feature to assess her own pronunciation. She would listen to her own words to check on her pronunciation and the aspects she needed to improve.

For me it's good because in that way you can, for example, if you are reading, like recording something, afterwards you listen to it and you can find out if you made a mistake, and learn the pronunciation that you have, you can improve your listening. (Postinterview)

Subcase 4: Jorge

Jorge was a fourth-year college student in Civil Engineering at a private university. He owned an Android HTC Inspire smartphone, and like Alba, he used text and talk prepaid plans, and accessed the Internet mainly through his home's Wi-Fi Internet connection.

Jorge's cell phone appropriation. During the preinterview, Jorge mentioned he had previous experiences using his cell phone for learning purposes. He was familiar with dictionary and language learning apps, and the use of PDF reader apps and Dropbox to access learning material on his cell phone. He said that when the cycle began, he was already using them on his own initiative, but was happy the teacher encouraged the class

to use these and other cell phone features for learning.

As per Jorge's comments in our informal conversations, he seemed to be already very comfortable with different features in his cell phone, including the Dropbox app which he used to store class material. However, he admitted he was not familiar with the potential of the audio recorder for oral assessment until the teacher assigned them to record themselves for one of the assignments. Listening to his recorded voice allowed Jorge check which aspects he needed to improve but he liked to have others' opinion, so he had peers listen to his recordings and provide comments. He also picked up using the PDF reader to access additional learning material on his cell phone.

According to Jorge's statements in our conversations and the postinterview, his cell phone use for educational activities was similar to previous cycles, except for two educational practices he integrated and perceived were improving his English learning.

Theme: Peer and self-assessment facilitation tool. As indicated in his postinterview, Jorge used the voice recording feature to check on his own pronunciation, but also he relied on his classmates to provide him feedback.

Well, I find it (cell phone) can help me a lot because for example, when I'm recording my voice, I play it and know what I'm doing wrong... But besides that, there are things that I can't notice and another person can. Thus if they (classmates) listen to my recording they tell me "well, you failed in this, this and this, you need to try to improve that." (Informal conversation/Postinterview)

Theme: Cell phone as e-reader. Jorge did not use the PDF app very often, but felt motivated during this cycle to download different files to complement his English learning. He indicated in his postinterview that having learning material on his phone saved him from carrying around the textbook, plus it provided complementary valuable

information.

I used adobe reader, a PDF reader where I downloaded a book in English called “English grammar”... Every now and then I read it and, how can I tell you, practice because although it is actually the same (as in the textbook), sometimes there are more things. I learned in this PDF the structure “had better” and what it means. (Postinterview/classroom observations)

Subcase 4: Andrés

Andrés was a third-year college student in Computer Science at the state university. He owned a Motorola MB200 with limited data storage that prevented him, initially, from implementing some homework assignments and informal educational activities.

Andrés’ cell phone appropriation. Andrés’ perceptions about cell phone educational use were mixed (both positive and negative) in my initial interactions with him. In the preinterview he stated that like other students he already had some previous experience using his cell phone for learning purposes. However, after a few weeks into the new cycle, he pointed out that he was having a hard time using his cell phone for some homework assignments because of the lack of memory space in the mobile device. Instead, he turned into other options to appropriate his cell phone for learning. The first thing Andrés told me in the preinterview on his thoughts about technology use was that, as a heavy user of social media and a sports fan, he used these interests to his advantage. He had Twitter and Facebook accounts, and had their corresponding apps installed in his cell phone. He also had downloaded the YouTube app and liked to watch videos in English on it when he had access to Wi-Fi.

In our preinterview, Andrés said he changed all the settings in his Twitter and

Facebook accounts into English to learn new vocabulary available in their interfaces, and to get familiar with popular terms. In addition, these sites enabled him to communicate in the target language with people who shared the same interests. Limited memory space in his cell phone, however, prevented him from incorporating other cell phone features into most activities. For instance, he could not download files or apps on his phone, or take pictures, as they took a lot of space in his memory. Thus, he had to team up for teacher-directed activities that included voice recording and uploading the files to the Dropbox, and used the laptop at home to access class material from Dropbox, and save complementary learning material. In the postinterview Andrés added that in order to compensate the disadvantage of not having learning material stored on his cell phone, he started looking up educational videos on YouTube related to the topics addressed in class.

Andrés indicated in the postinterview that for most of the cycle, he only kept a few apps, such as the dictionary, YouTube, and social network apps, and appropriated his cell phone solely for activities that did not require much memory space.

Theme: Multimedia delivery tool. To support his learning from classroom instruction, Andrés took advantage on the YouTube app to watch educational videos related to English language topics, such as the use of verb tenses, beyond the explanations provided in class.

I use the Wi-Fi in my job, and in the break time, I was looking for some videos of phrasal verbs, and also all the tenses in English, using my cell phone. For example, you know that there is a future past in English, that is like “I was going to...blabla,” and I didn’t know about it, and also that there are 21 tenses.
(Postinterview)

Theme: Social interactivity tool. Another way in which Andrés took advantage

of the social networking sites available on his phone was using these to interact with native English language speakers, or speaking in English with those friends that knew the language.

Well, look, we created a group on Facebook in our previous course. I created that group, and the first thing I posted was “if you are going to speak Spanish here, please keep your words, let’s speak English.” For example, on Twitter, which I use more often than Facebook, I only tweet about sports, so all my followers are related to sports, and mainly, the team I like, Boston. I have some friends who follow me and I follow them, and they are from Boston. Since they don’t speak Spanish, I have to speak English. I mostly tweet to them in English.
(Preinterview)

After data collection was over, Andrés emailed me and told me he bought an external memory card, and started adopting and adapting new uses for his cell phone. This was an example of why appropriation is iterative, as argued by Cook and Pachler (2011) and Carroll and colleagues (2002). That is to say, the addition of a new feature to the phone (more memory space) enabled Andrés him to explore and adopt new educational uses, by downloading different apps that enhanced his opportunities to improve his English.

In the last interview I told you that I don't have storage device but now I do. I have been downloading apps such as: The Bible, Dropbox, etc. I downloaded an app which name is "Docs to go" it is wonderful. It works like Microsoft Office, it has PowerPoint, Word and Excel and I have done a lot of things with that app.
(Email)

According to this email, Andres’ appropriation of his cell phone was modified once more. Moreover, in a follow up email (Appendix L), he mentioned how he expanded the educational uses of his cell phone to improve his pronunciation and listening skills by downloading and watching movies in English on his cell phone.

Common Cell Phone Appropriation Among Participants

Emerging themes across subcases indicated similar ways in which students appropriated cell phones for educational purposes. Table 7 shows a summary of these emerging themes with sample codes from the subcase students' pre- and postinterviews, as well as informal conversations with them. In addition, to support these themes I included example codes identified from interviews and conversations with the other three students, and responses to open questions in the pre- and postquestionnaires. Findings from classroom observations and postquestionnaires supported what the students in the subcases stated. These and other students in the English class appropriated their cell phones as tools for *reference, research, collaboration, data gathering and note taking, and repository*.

Theme: Reference tool. The possibility of downloading dictionary apps to cell phones enabled students to have instant offline access to different meaning of words, phrases and idiomatic expressions, as well as to check for the correct word pronunciation. For instance, in one of the classroom observations, Alba was looking for the pronunciation of the word "preeclampsia." Interestingly, this word started up a discussion, not only on the correct way to pronounce it, but also on how to explain it in English to the rest of the class. The appropriation of cell phones as reference tools was already popular among students in this class, where most students replaced physical dictionaries with these apps. Table 8 shows results from the postquestionnaire indicating that 11 students (55%) used the dictionary app on a regular basis.

Table 7

Cell Phone Appropriation Across Cases

Emerging themes on student cell phone appropriation						
Sources	Reference tool	Research tool	Collaboration tool	Data gathering/note taking tool	Repository tool	Data collection strategies
Student subcase example does						
Luis	Search definitions dictionary on the iPod, using the Oxford dictionary	Researched authors Researching using our cell phones	Use cell phones to communicate about exam topics	iPod "Notes" app Snap picture of H.W., note taking, sometimes taking pictures		Pre-/postinterview, informal conversations
Alba	Dictionary App, provide definitions	Faster access to information Look things up in the Internet	share audio files Assist other classmates Shared cell phones in the classroom	No time to write notes so I snap a pic of it	Download files from Dropbox to phone, access files offline	Postinterview, informal conversations
Jorge	Looking up words & pronunciation, help understand meanings of words	Research a topic on Internet	Share folder with teacher, shared info with others	Taking pics from classmate's book	Download doc from Dropbox for offline access, learn new things from material on the phone	Pre-/postinterview, informal conversations
Andres	Use cell phone to look for meanings Dictionary app Learn different meaning for one word in context	Look up info about grammar topics	We can share material through cell phones Collaboration among peers	Take pic from the board	More storage	Informal conversations, postinterview
Supporting example codes						
Other students	Look up meaning of words, looking up words from different contexts Using the dictionary	Research topics Look up info	Share cell phones with others, share things with Dropbox, more focused as a group	Just take a picture of the board, taking pics of notes, take pictures of the board, take pics with the phone	Saved photos with notes from class	Preinterview, postinterview, informal conversations
Open responses	Dictionary use, information access help with pronunciation	cell phone as information tool, research tool, information access	Collaboration Work better in groups		A cell phone as a pocket teacher	Pre-/postquestionnaires

Table 8

*Number of Students Reporting in Postquestionnaire
Using an Offline Dictionary App*

Frequency	<i>n</i>	%
Almost daily/daily	11	55
Often	4	20
Sometimes	1	5
Rarely	3	15
Never	1	5

Because the teacher gave the consent to have cell phones at hand for assistance, students felt encouraged to use the dictionary apps more often in the classroom while working on individual assignments. Additionally, these were offline dictionaries, for which Internet was not needed when used in the classroom. Another advantage of these apps was their portability and flexibility to use over paper dictionaries.

Jorge: Well, this has saved my life in many cases because there are things that I found, and afraid to ask, I just kept it to myself. So, I just took out my cell phone, accessed the (dictionary) app, and looked up the meaning and how I could use that word. (Postinterview)

Luis: I've always used the dictionary I have on my iPod. I have it in English, its offline, so, I can look up words, and it gives me the definition, the pronunciation. (Postinterview)

Andres: If I am in the bus I'm going to feel uncomfortable with a (physical) dictionary and with the list of words. [So] I'd take my cell phone and I look up all the meanings, and it's quicker because I don't have to look [through] page by page, I only have to put [type] the word and it shows up. (Postinterview)

Theme: Collaboration tool. In the previous section, cell phones were presented as collaboration tools from the teacher's perspective, focusing mainly in classroom

activities, as well as fostering this collaboration through the Dropbox account. Cell phones are intrinsically devices for communication, which when connected to the potential of social networks, enhance the opportunities for more students' collaboration beyond the classroom or teacher's guidance. Thus, social networks like Facebook and instant messaging apps like WhatsApp enable students to appropriate these mobile devices as collaboration tools, as seen in the postquestionnaire's responses (Table 9).

According to the interviewees, outside the classroom, some students shared class material stored in their phones through mobile email, and discussed topics about class presentations through a WhatsApp group.

Alba: (Postinterview): When we were recording the conversations, each of us had a cell phone. We used one, but then I sent the audio to my partner (through WhatsApp). Ah, I also sent (class) information to friends who couldn't access Dropbox on their cell phones. Since I had it (downloaded) in my cell phone, I sent a friend an email to her cell phone with the files (attached).

Andres: For instance, we have a class presentation tomorrow, the group I told you about yesterday. I was talking with one of the guys, and we were discussing the topic through there (WhatsApp), about what we would talk about, because we only have 10 minutes, and there are five of us. So, we send the information that way. I say, look this is what I plan to present, but we can summarize it from there. (Preinterview)

Table 9

*Number of Students Reporting in Postquestionnaire Collaborating/
Communicating with Others in English Using a Social Network (WhatsApp, FB)*

Frequency	<i>n</i>	%
almost daily/daily	14	70
Often	3	15
Sometimes	2	10
Rarely	1	5
Never	0	0

Theme: Data gathering and note taking tool. Sometimes the teacher had a lot of material to cover in one day, and needed to rush when writing some notes on the board. In order to save time, students would use their cell phone cameras, which enabled them to capture the information, and later use it as a reference or transcribe it into their notebooks (Table 10).

Not only did students take pictures of the notes on the board, but also from classmates' notebooks, and even grammar sections in their textbook. For instance, some students showed me how they used their cell phone cameras to save notes. Examples of pictures are presented in Appendix M. Some students, like Luis, said they would actually type the information using the Notes feature.

Alba: Well, sometimes, when I don't have much time to jot down some notes, I take a picture of it. Then at home I write it in a notebook. But not all the time, that is when I'm in a rush or when I have to do something. (Postinterview)

Luis: (I use my iPod) to write down homework, take notes, jot down any word or thing of my interest for later, anything that I see in the street.... Directly in the app that comes with it to take notes. (Postinterview)

Table 10

*Number of Students Reporting in Postquestionnaire
Taking Pictures of Information on the Board*

Frequency	<i>n</i>	%
Almost daily/daily	3	15
Often	10	50
Sometimes	5	25
Rarely	1	5
Never	1	5

Theme: Cell phone as repository. Student participants also reported that having class content downloaded on their smartphones allowed access in different locations. As stated previously, the teacher uploaded class materials to the Dropbox, and students could install the Dropbox app in their smartphones. For some students downloading the files to their cell phones enhanced content access, as they could have educational material available offline. Jorge was a heavy user of Dropbox, and pointed out he was taking advantage of this app by saving all the files on his phone, so that he did not have to rely on the Internet, and access class material while moving across locations.

Jorge: Right now we are learning about phrasal verbs, so what she's done is to summarize information and put it together in a word doc. Also some audio, mp3, listening, and I've found that very useful. Well, it's been very helpful to me because it has summarized the info I had to look up in the textbook page by page. I have a summary of all that info, and all just by tapping on the screen and opening the file, as simple as that. (Postinterview)

The four subcases represent how participants appropriated their phones to improve their English, by consulting dictionaries, using educational, apps and/or sharing through social networks, among other activities. All interviewed students affirmed that these types of activities enhanced their speaking and listening activities, as they were able to learn words in contexts and applied them in real-world situations.

Contrary to my assumptions, text messaging and video recording were the least used features for educational purposes among participants. As incoming text-messages are free in the Dominican Republic, I thought that the teacher would explore online group-messaging websites to send information to students. Also, in my opinion, the video recording feature had some advantages over the audio recording for oral assessment activities. Text-messaging or short-message-service (sms) was one of the first features

used in MALL research (Cavus & Ibrahim, 2009; Thornton & Houser, 2005), and became very popular to investigate vocabulary learning in MALL studies. However, in our early conversations about integrating cell phones in her classes, the teacher ruled out the possibility of implementing any activities involving text-messaging due to the cost involved. As said above, incoming text messages in the Dominican Republic have no cost, but the average cost of an outgoing text message is about half the price of a talk minute in a prepaid plan, which was the most common among students.

While chatting with some of the student participants, they indicated that they used text messages as little as possible to save credit for phone calls. They had replaced text-messaging with more inexpensive options, such as WhatsApp and Facebook chat, to communicate with others. For instance, in the preinterview I asked Alba which was the feature she used the least, her response was “*text-messages because I use WhatsApp and almost everybody uses that, so that’s the one (text messaging) I use the least.*” For educational purposes, this feature was not appropriated because it was replaced with online instant messaging apps, which provided a more affordable option for communication and collaboration among students, and with a lesser economic impact.

Something similar occurred with the video recording feature. According to responses in the postquestionnaire, this feature was the least used for language learning purposes. Cell phone video-recorders enabled audio capturing, but also images. However, the main need the teacher aimed to address was students’ pronunciation and oral communication skills, which was accomplished with the audio recorder. The appropriation of the audio-recording feature for assessment facilitation among students

was initially encouraged by the teacher as part of her lessons through homework assignments. Student participants later continued using it on their own initiative for the same purposes. It seems they did not see the video recorder that necessary, as per the low frequency reported in the postquestionnaire (Table 11).

Context on Appropriation of Cell Phones

Earlier in the chapter, I argued how the teacher's appropriation of cell phones for instructional purposes in the classroom depended on the social and physical contexts that surrounded her and her students. Similarly, these interrelated characteristics of context influenced students' implementation of activities with cell phones. Several physical and social aspects in the classroom context influenced the extent to which the teacher and students used cell phones to achieve activities. First, the physical aspects included the surroundings of the participants, classroom (or other learning environment) location, instructional resources at hand, network connectivity and even lighting, noise levels and temperature (Traxler, 2011b). The classroom setting had a traditional layout, with

Table 11

Number of Students Reporting in Postquestionnaire Recording a Video of Themselves or Other People Speaking in English

Frequency	<i>n</i>	%
Almost daily/daily	3	15
Often	0	0
Sometimes	8	40
Rarely	2	10
Never	7	35

students seats in rows facing the whiteboard, and the teacher's desk located to the right of the whiteboard. The location facilitated an adequate illumination and temperature in the room. Power cuts were expected at random times, and they could last a few minutes, or hours. A limited number of radios (with CD players) was available for teachers to play the textbook CD with the listening exercises, and they were first come, first served. Another constraint was the lack of open Wi-Fi in the building, which according to students worked for a few months but was not strong enough. Through my different interactions with the participants, frequent codes identified in our conversations were "*no Wi-Fi in the building,*" and "*we need Wi-Fi access in the classroom*" In this particular class, as reported earlier, smartphone ownership was high, but still, participants considered this a constraint, which I identified through other recurring codes in the data analysis, such as "*not everyone has a smartphone,*" and for those students who had smartphones, only a few actually had mobile data plans, and were willing to spend for educational purposes. The social contexts of the participants included, but were not limited to, other students and other people they interacted with, their background (such as education and economic status), habits, interests, and rules and norms of cell phone use inside and outside the classroom.

On the teacher's side, most MALL activities took place in the classroom and through homework assignments. On the student participants' side educational interaction with cell phones occurred inside and outside the classroom, bridging formal and informal learning opportunities. Student participants indicated that one of the properties that enabled their appropriation of cell phones was that they could use these devices across

locations. For instance, Andrés' quote in the previous section showed that he preferred to use the dictionary app in his cell phone instead of a paper dictionary when riding the bus. In this physical context, while sitting in a moving vehicle, he felt he worked better holding the cell phone. Jorge indicated he was able to access complementary class material on his cell phone while he was waiting for his classes to begin at the university. He did not have to rely on Internet access (a limitation in his physical context), as he saved content from Dropbox into his cell phone. Alba's statements showed that she could move around her house when she was working on her assignments on her cell phone, and not be restricted to a fixed location (a desktop computer).

Conclusion

This chapter presented emerging themes from data collected through interviews, conversations, classroom observations, and questionnaires on teacher' and students' appropriation of cell phone for language learning purposes in a Dominican classroom context. Findings addressing research question one indicated that the teacher's perceptions were mostly positive, based on her behavior during classroom observations, and statements in the interviews and informal conversations. For this teacher, integrating cell phone use into her instruction facilitated her goal of helping students utilize everyday English and go beyond classroom content. In addition, the teacher indicated that using cell phones as described above provided more real-world application activities among her students, as they could bring their own experiences and interests into the classroom.

Findings for research question two showed that the perceptions of the four

students represented in the subcases on the appropriation of cell phones as language learning tools were in general positive. These students felt that the opportunity for using cell phones allowed them to enhance their learning experience in the target language, and as per the general responses in the postquestionnaire, other student participants in the classroom also had positive opinions on the educational uses of cell phones.

CHAPTER V

DISCUSSION AND CONCLUSION

Overview of Purpose of Study and Methods

The purpose of this dissertation study was to investigate how a Dominican English language teacher and her students appropriated cell phones to implement educational activities inside and outside the classroom. The study also investigated which cell phone features enabled the participants to appropriate these mobile devices for the different activities implemented. For this study, I selected a teacher and student participants from a class at an Intensive English Program (IEP) center located at a public university in the Dominican Republic. This program runs for ten months, and it is divided into 7-week cycles. I conducted data collection during one cycle for 8 weeks from mid-May to early July in 2014.

Using an embedded single-case study design, I collected data from the teacher and seven students through semistructured interviews and informal conversations, supported by classroom observations, and pre- and postquestionnaires administered to the whole class (23 students). Twenty-one students returned the completed prequestionnaires and 20 returned the postquestionnaires. Data analysis took place following five of the six-step process of thematic analysis (Braun & Clarke, 2006): (1) familiarizing with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, and (5) defining and naming themes. For steps 2 to 5, I coded the data following Saldaña's first stage of data analysis through initial and in-vivo coding (Charmaz and Corbin & Strauss as cited

by Saldaña, 2012), and the second stage through focused coding (Charmaz as cited by Saldaña, 2012), to answer the two main research questions addressed in this study:

1. How has a Dominican English language teacher appropriated cell phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

2. How has a group of Dominican English language students appropriated cell phone features inside and outside the classroom? What cell phone features enabled this appropriation for educational activities in a Dominican context?

A mobile human-computer interaction (MHCI) perspective with a focus on the appropriation of cell phones guided the data analysis. This analysis identified several emerging themes presented in Chapter IV through five subcases: the teacher and four students (Luis, Alba, Jorge, and Andrés), as well as findings across subcases, and from the classroom in general.

Summary of Findings

A summary of the findings indicated that several features available in cell phones allowed participants to appropriate these devices in different ways. For research question one, the analysis of data provided a description of the teacher's cell phone appropriation, and identified five major themes: cell phone as connectivity tool, content delivery tool, research and reference tool, and assessment facilitation tool. Two additional themes identified cell phones as time-management tools and as emergency power back tools. For research question two, emerging themes from the four student subcases showed that these

participants appropriated different uses for their cell phones: iPod as a cell phone (Luis), assessment and feedback facilitation tool (Alba); peer- and self-assessment facilitation tool and e-reader (Jorge); multimedia delivery and social interactivity tool (Andres). Across subcases, participants appropriated cell phones as reference and research tool, collaboration tool, social-interactivity tool, and repository. According to findings from classroom observations and questionnaire responses, other students in the classroom also appropriated their cell phones in similar ways.

Discussion of Findings

Participants' Appropriation from a MHCI Perspective

Findings reported in Chapter IV showed how the participants used cell phones as tools for language learning purposes, through the interaction between the teacher and her students in the classroom context. The social and physical contexts where the teaching-learning process occurred influenced the conditions under which the teacher and students appropriated their cell phones to implement educational activities. Figure 4 shows cell phone appropriation by student and teacher participants within the MHCI framework.

The right side of Figure 4 describes teacher cell phone appropriation, by exploring the potential of cell phone features in terms of the students' language learning needs, and the opportunities and limitations in both social and physical aspects of the classroom context. The left side representing the students shows that although the emerging themes captured individual examples of appropriation of specific features, a general description of cell phone appropriation can be applicable to the four students in the subcases. In

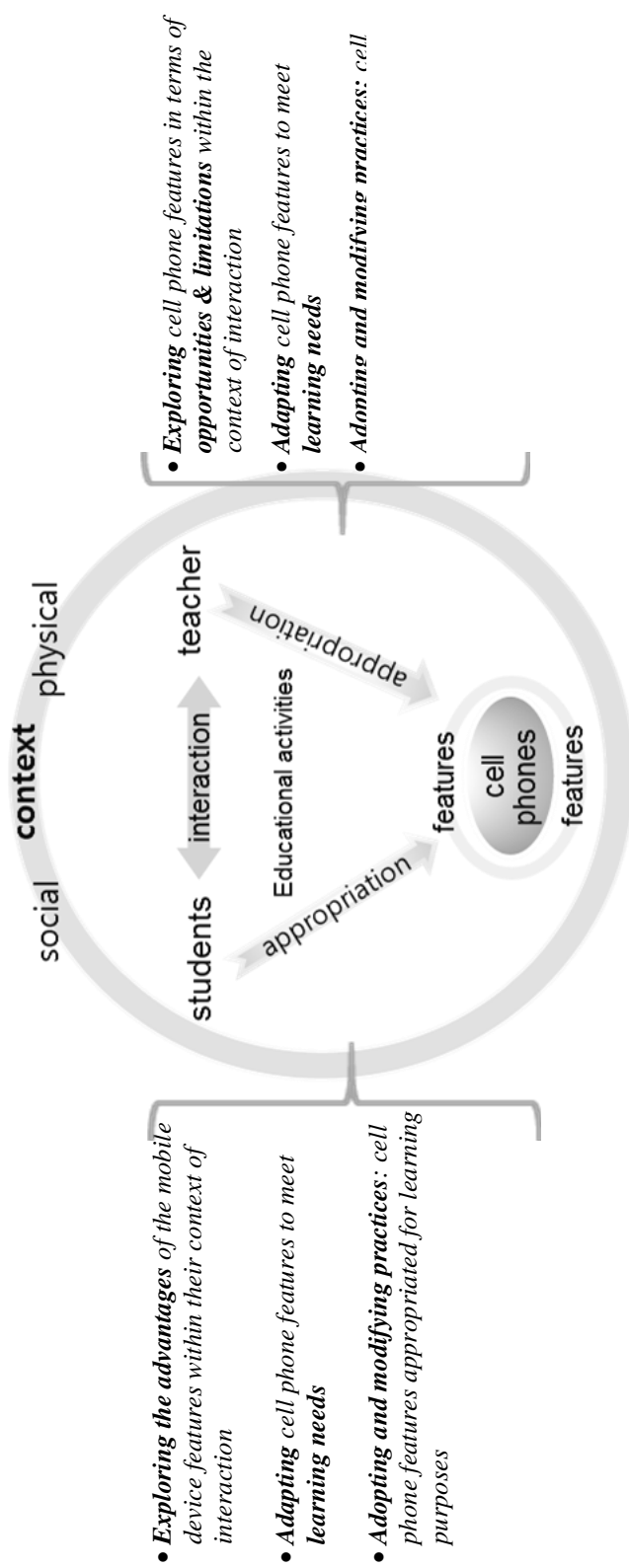


Figure 4. Participants' cell phone appropriation from a MHCI perspective.

general, students explored the individual advantages that features in their respective cell phones (and iPod in Luis' case) provided. Like the teacher, students adapted the properties of these features to help them meet their language needs in a way that otherwise would have not been possible, or more difficult to achieve. For instance, Jorge said that using his cell phone as a learning material repository allowed him to study and review in different places without the need of a book or written notes. Had he not had enough storage on his cell phone memory, he would not have been able to save these files, and would have probably carried his books. Using his cell phone as repository was a way for Jorge to modify his language learning practices outside the classroom.

The role of context is very important in the mobile learning experience (Traxler, 2011b; Winters & Price, 2005), as it affects users' adoption and integration of mobile technologies to already established social practices (Cook & Pachler, 2011; Pacher et al., 2010). As illustrated in Figure 4, participants' appropriation of specific cell phone features to implement educational activities was defined by both social and physical contexts (Carroll et al., 2002; Simoes & Gouveia, 2011; Wali et al., 2009). As stated previously, social and physical factors in this Dominican setting were influential to the educational use of cell phones. Drawn from the findings, Table 12 shows the social and physical components in terms of opportunities and limitations that influenced participants' cell phone educational appropriation.

In the social aspect, students' personal interests were among the opportunities that facilitated the educational appropriation of cell phones. Although the textbook provided exercises for students to practice phrasal verbs, the teacher replaced the exercises with

Table 12

Social and Physical Aspects of Context in Cell Phone Appropriation

Social context	Physical context
<p>Opportunities</p> <ul style="list-style-type: none"> • Integrating students' interests and social practices into the instruction (e.g., using pop music to teach phrasal verbs) • Collaboration in the classroom and through social networks with peers <p>Limitations</p> <ul style="list-style-type: none"> • No cell phone allowed policy in the English center • Mobile data rates expensive for students 	<p>Opportunities</p> <ul style="list-style-type: none"> • Mobility and portability • Wi-Fi access in other settings • Immediate access to information • Sharing content across locations <p>Limitations</p> <ul style="list-style-type: none"> • No Wi-Fi in the classroom • Few radios available • Power-cuts

those that students considered as more appealing, which were songs of some of their favorites American artists. Integrating elements from learners' everyday life experiences generate opportunities to practice the language in authentic contexts (Kukulska-Hulme, 2013; Pachler et al., 2010).

As described in Chapter IV, by selecting popular songs for the fill-in-the gap activities, students felt more motivated, as some participants reported that listening to music in English was part of their recreational social practices. The literature reviewed did not reveal any specific MALL studies where the teachers used songs to enhance students' language skills, except for the mention of a study in which some language learning strategies included songs in English (Belanger, 2005, as cited by Chinnery, 2006; Joseph & Uther, 2006; Palalas, 2011). In the activity where students recorded a dialogue on a

topic of interest, the teacher made sure to foster social interaction among students that shared similar interests, as well as having students learn about others' interests using the target language. The teacher reported this social interaction among students continued outside the classroom, since during breaks several met to listen again to the recordings and comment on it in English.

As described in Chapter IV, another social factor that afforded student appropriation of cell phones is that students could connect easily and collaborate with peers through the different social networking sites accessing through their phones, thereby expanding their student community into a virtual environment. Traxler (2010) pointed out the important role that mobile devices, like cell phones, along with social networking sites play to foster a virtual community where students' learning can be enhanced.

Limitations in the social aspect were also present in this classroom, and influenced how mobile learning activities took place. Banning of cell phones in educational settings is one of the most common challenges that mobile learning advocates face (Merchant, 2012). Norms of use for cell phones represented a challenge to the teacher participant. Although it was not a hard and fast rule in the institution, a known traditional policy was that cell phones were not allowed in the classroom. According to the coordinator, cell phones were not allowed as they caused distraction. Ferreira and colleagues' (2013) advice on this issue was "as for social context, it is important to be attentive to what is deemed adequate or not in the use of mobile and wireless technologies, depending on place or event where the student is interacting" (p. 72). Thus, the teacher participant carefully addressed this challenge by pointing out to her students and the

administration the purpose of having cell phones available during her classes. She was conscious that for the integration of cell phones to be accepted, she needed to keep the norms and protocols established within the institution (Traxler, 2010).

Students' socioeconomic background was another social factor influencing cell phone appropriation in this classroom. Most students were not willing to spend the prepaid mobile data for classroom activities, which drove the teacher to think about using her cell phone hotspot as a connectivity tool to grant them access to Internet. As costs of data are still considerably high in the Dominican Republic, many young adults cannot afford to spend large amount of mobile data and prefer to rely on Wi-Fi hotspots. Merchant (2012) acknowledged that this economic factor impacts in cell phone ownership among young adult learners. Although modern cell phones have become more affordable, an inequity in affording mobile services still exists, particularly in developing regions.

This inequity of access is discussed in previous studies, where student participants saw as a disadvantage the fact that they needed to incur expenses to participate mobile learning activities (Churchill & Churchill, 2008; Lee, as cited in Kukulska-Hulme & Shield, 2008). Student participants in my study preferred to use data to engage in their recreational activities of connecting and communicating through social networks, as well as looking for recreational topics of their interest. This does not mean that students were reluctant to engage in educational activities, since some of these recreational activities contributed to their informal learning of English. For example, Andres used his Twitter app to read and share topics about sports in English and communicated with English language native speakers through Facebook.

The physical aspect of the classroom context presented opportunities and limitations that needed to be considered for cell phone appropriation. Some of the opportunities included that the teacher could take advantage of the close physical proximity of students inside the classroom to facilitate group work and use fewer cell phones. Outside the classroom, students did not need to complete assignments or carry out activities in specific locations since, when connected, their devices allowed for more information access. An intrinsic characteristic of cell phones is that their small size allows them to be carried around almost all the time (Caudill, 2007; Kukulska-Hulme & Traxler, 2005; Sharples et al., 2007). Thus, students had more opportunities to connect to the Internet in other locations such as home, malls, and public spaces, which facilitated the completion of assignments and other learning activities on their cell phones at their own pace. That is, the mobility and the portability of cell phones draw a blurred line between the physical spaces where they can be used (Kukulska-Hulme, 2012; Traxler, 2010). These advantages allowed the teacher to implement and suggest activities where everybody could share educational content across locations.

The limitations in the physical context were a key factor in the teacher's exploration of cell phone features to meet her students' learning needs. As reported in Chapter IV, the lack of Wi-Fi in the building and the limited mobile data in students' smartphones were the two main constraints, but also the two main drivers for the teacher to explore other options to take advantage of cell phones. Earlier in this section I pointed out that the socioeconomic factor impacted how students chose to spend their mobile data, which was mostly on recreation, while relying on available Wi-Fi connections for

educational purposes. Despite all the educational potential of mobile devices in providing faster access, connectivity, and collaboration, recent research suggests paying closer attention to the difference between mobile learning implementation in developed and developing regions in terms of wireless connections availability in the institutions' facilities (Nortcliffe & Middleton, 2013; Traxler, 2011a).

Comparison of Findings with Previous MALL Research

Cell phones' different features allow the capture of content, sound, images, and voice, providing opportunities that have been taken into account in the implementation of different MALL studies in controlled and naturalistic environments (Burston, 2014; Kukulska-Hulme & Shield, 2008; Viberg & Grönlund, 2012). This section compares some of these studies with the findings reported for my dissertation. Although the term "appropriation" was not present when describing the use of cell phones for learning purposes, there are several similarities between the educational activities reported in these studies, and the way participants in my dissertation study used their cell phones.

Cell phone as a connectivity tool. Because of the nonexistent Wi-Fi connections in the building, the teacher used her cell phone hotspot feature and enabled students to connect to the Internet. The reviewed literature did not show this particular use of cell phones for language learning, maybe because newer cell phone models have integrated a more powerful hotspot capability. When referring to cell phones as tools for connectivity, authors described them as already (wireless) connected technologies that allowed learners to have access to information and be able to share that information with other learners

(Nortcliffe & Middleton, 2013; Traxler, 2009). The particular use of cell phone as a hotspot presented in my study would be a new addition to the potential of these devices within context with limited wireless connections available.

Cell phone as a content-delivery tool. The teacher took advantage of the playback feature to deliver audio content for instructional activities in two ways. First, the cell phone replaced the role of the radio in the classroom to play the textbook listening activities. Second, the device music player and YouTube app allowed the teacher to use music to deliver samples of authentic language in context. The literature presents various examples of mobile devices used for content delivery, but focused mostly on out of the classroom activities via text messages or podcasting. Kukulska-Hulme and Shield (2008) discussed an extensive list of MALL studies primarily on delivering content through mobile devices, including cell phones. Initial projects focused on texts and media delivered to students' devices to increase vocabulary learning, usually through asynchronous interaction. In my study, the type of content-delivery is in the classroom, and allowed a synchronous face-to-face interaction. This educational use of cell phones was not present in the literature reviewed.

Cell phone as a research and reference tool. The teacher acknowledged that she relied on her cell phone for reference and info search when needed because she was not a "know-it-all." She needed to consult some meanings of words, grammar rules, among other language learning related topics. Accessing just in time information for research purposes or reference is one of the benefits provided by cell phones (Burston, 2014). Dictionaries have been one of the most commonly used resources for language learning,

and several studies have pointed the benefits of using dictionary apps to enhance incidental vocabulary learning (Song & Fox, 2008; Sweeney & Moore, 2012). In the present research study, participants took advantage of the different features offered by dictionary apps, such as pronunciation, thesaurus, and different definitions depending on the context. The teacher encouraged the use of English-English dictionary apps, as some of the paperback dictionaries in the classroom were in Spanish-English versions.

Cell phone as assessment facilitation tool. As described in Chapter IV, cell phones' audio-recording and playback features facilitated the assessment of students' oral performance and pronunciation in English. Joseph and Uther (2006) discussed traditional MALL applications to pronunciation in the target language. They argued that mp3 players and cell phones with recording capabilities are suitable to practice and assess pronunciation in a more conversational and authentic way. In my study, although this was an activity initially modeled by the teacher, it was later adopted by some of the students in the class for self- and peer-assessment. This teacher's use of cell phone recording features for assessment was similar to other studies (Cooney & Keogh, 2007). For instance, Cooney and Keogh used cell phones to provide assessment on students' pronunciation of Irish. These activities facilitated teacher assessment, and student's self-assessment as well.

Completing quizzes through the cell phone also facilitated student assessment and feedback. For instance, as seen in Chapter IV, Alba accessed *Survey Any Place* (an online resource the teacher used to create quizzes) from her cell phone because of the flexibility to complete the assignments anywhere without being confined to a physical space. Completion of quizzes through cell phones was popular in early mobile learning projects,

but these were sent via text messages through researcher-developed programs (Cui & Wang, 2008; Levy & Kennedy, 2005; Thornton & Houser, 2005). In other studies, quizzes were sent via mobile web (Kiernan & Aizawa, 2004), or a web-based program that allowed student participants to choose either a desktop computer or a cell phone to complete the quizzes (Stockwell, 2010). Unlike these studies, the teacher participant in my dissertation study used an online resource that probably did not exist at the time of the implementation of the studies mentioned.

Cell phone as collaboration tool. Another important property of mobile devices is their capability to enhance collaboration among users both face to face activities and virtually (Kukulska-Hulme & Shield, 2008). These technologies can facilitate and enhance interactions and collaborations among learners, by communicating with others across devices and enabling learners to share data, messages, and files (Ally, 2009; Begum, 2011; Comas-Quinn, Mardomingo, & Valentine, 2009). The teacher participant in the present study reported she was able to not only deliver class material with the assistance of cell phones, but also to foster collaboration inside and outside the classroom. In the classroom, she would ask students who did not have smartphones (or Internet access in them) to team-up and share one connected device for a given activity. Virtually, students shared with her any additional material that could complement the class using Dropbox.

Cell phone as a note-taking and data gathering tool. Using cell phones to take notes and gather data were not new to several of the student participants. They would do this either with the cell phone camera by taking a picture of the text in a page or the board

(using the cell phone as a scanner), or by typing the text into the Notes function on their cell phones. Several studies have documented this activity, in general reported as a student's informal learning strategy inside and outside the classroom (Cheung & Hew, 2009; Godwin-Jones, 2011; Kukulska-Hulme, 2009; Kukulska-Hulme & Shield, 2008).

Cell phone as repository. As mobile technologies evolve, capacity for data storage has increased considerably (Burston, 2011; Godwin-Jones, 2011). Student participants affirmed that they were able to store different type of files in their cell phones for offline access.

Cell phone as social-interactivity tool and multimedia delivery tool. In Andrés' subcase, at the beginning of the study he had a hard time trying to implement learning tasks with his cell phone due to limited storage space, in particular those tasks assigned by the teacher. However, he engaged in informal learning activities by interacting with native speakers through social networks like Twitter and Facebook, and used strategies such as changing the settings of these social sites into the English language. As per the responses in the postquestionnaires at the end of my study, other students were using their cell phones as Andrés did. As simply as these techniques may seem, they have caught the attention of researchers in the field, reporting on how English language students are taking advantage of these informal learning opportunities with their cell phones (Kukulska-Hulme et al., 2015). Andrés also turned to watching videos related to English language learning on the YouTube app. When he installed the expanded memory, he downloaded movies in English to watch while moving. Andrés' appropriation of his cell phone as a social interactivity and multimedia delivery tool

reflected the findings in a study by Ducate and Lumicka (2013), where students performed several formal and informal activities to improve their language learning. The difference was that in this study, students used loaned iPods Touch instead of their own cell phones so that they could take advantage of the video and multimedia capabilities. Since students had to return the iPods, it is possible that students did not continue the learning practices with their cell phones due to their limited features. Although early generation of cell phones made it difficult for learners to watch videos (Chinnery, 2006), newer generation of cell phones, namely smartphones, have improved and incorporated features existent in mobile devices used in earlier studies, such as iPods (Burston, 2011). Thus, many of the activities implemented in studies like Ducate and Lumicka's could be adapted for research with participants' own cell phones.

iPod as cell phone. In this study, Luis' appropriation of his iPod as a cell phone for language learning reflects in a way the role of iPods in MALL literature. iPods have been present in MALL studies for several years, being the first mobile devices to support audio, and later video content, for second language learning activities (Burston, 2014; Kukulska-Hulme & Shield, 2008). Luis was able to use his iPod touch instead of a cell phone for most of the learning activities reported in this study. His educational use of the iPod was mirrored what students did in the Hoven and Palalas (2011), and Ducate and Lumicka (2013) studies, where participants used iPods for informal learning activities, including the recording and audio playback features. iPods are not commonly used among Dominican students, but for this student participant, it was the mobile device at hand, which helped him meet his foreign language learning needs.

Regarding to the appropriation of cell phones as time-management or emergency power back-up tools, the MALL literature reviewed does not show detailed information about these complementary uses. However, researchers have pointed out the capabilities of cell phones as power sources, especially in developing regions (Casany, Alier, Mayol, Conde, & García-Peñalvo, 2013). Others have suggested that future studies should explore how mobile devices may influence on how learners manage their time when learning a second language (Viberg & Grönlund, 2012). Although the focus of time management was on the teacher's side, some student participants agreed that using their cell phones helped them manage and save time in different activities for English language learning.

In general, the ways participants used cell phones for language learning purposes in this study resembled those reported by Kukulska-Hulme and colleagues (2015). For instance, some of these authors' examples show that teachers and students used cell phones as note taking tools, collaboration tools, research and reference tools, and even as self-assessment and feedback tools (Kukulska-Hulme et al., 2015, pp. 17-19). In an earlier study conducted with adult language learners (Kukulska-Hulme, 2012), participants reported having engaged in similar tasks, such as changing the cell phone interface settings to the target language to improve their vocabulary learning. They also made use of inexpensive and free online resources through their cell phones, as well as other strategies, like checking pronunciation on their phones, and using their cell phones as a memory aid by storing pictures with information.

Implications for Pedagogical Implementation in the Dominican EFL Classroom

As seen previously, an adequate implementation of MALL activities in a Dominican EFL classroom can help address the lack of access to technology resources necessary to meet the needs of today's generation of young adult students. Considering the existing limitations in a traditional classroom in this developing country, a careful design of activities with the integration of the teacher's and students' devices can prove effective if the teacher has clearly identified the learning objectives and students' characteristics. Although the majority of MALL studies reviewed focused on the study of vocabulary acquisition, and listening and speaking skills in controlled environments, there are opportunities to adapt them to more learner-centered and real-world situations in a Dominican setting. By using their own mobile devices, participants in my study could apply classroom material in real-world situations where they could use authentic English language, which helped them enhance their communicative competence (Burston, 2011).

Mobile learning belongs more to students than teachers, but most learners struggle without teacher's direction (Kukulska-Hulme, 2009). Some student participants in this study reported they used cell phones for learning purposes at some point in the past, deliberately or incidentally. However, the ideas provided by the teacher encouraged them to use their cell phones in new ways. As suggested by Kukulska-Hulme and Shield (2008), the teacher provided the students with more active roles in the activities she implemented, so that they could develop their speaking and listening skills while talking about topics of their interests. As the final goal in language learning is being able to

communicate, teachers in classrooms like the setting for this study can make use of similar activities to attain such goal. While the aim of a mobile learning approach is to help learners create their content and contexts for learning (Pachler et al., 2010), teachers' pedagogical expertise will continue to play an important role for facilitation and guidance.

Contributions of this Dissertation

This dissertation study aimed to contribute to mobile learning scholarship in several ways, which would not only apply to a Dominican context, but also to settings in other countries where MALL has been implemented. Researchers have criticized that many mobile learning projects have relied on studies where participants are loaned mobile devices (Burston, 2014; Kukulska-Hulme, 2012; Wali et al., 2009). I did not provide the participants with any type of device for my study, since in a typical classroom, it would be normal if at least one student does not own a cell phone. Ownership is important, as it is not the same as interacting with a loaned cell phone than doing it with one's personal device, as loaned may reduce the possibilities devices for sustainable educational use (Kukulska-Hulme, 2009).

Another factor that might impact a continuous integration of cell phone in the EFL classroom is the development of programs and applications specifically for the purpose of conducting research (Burston, 2014). For the present dissertation study, the programs and applications used to support participants' activities with cell phones were resources available on the Internet, and not programs or software developed for the purpose of this research. Thus, sustainable educational cell phone use would be more feasible beyond

this study. Many online resources exist that can be coupled with cell phone for educational use, but only a limited number of these resources work in the Dominican Republic. In other countries, like the United States, more options exist for online resources that can be combined with cell phones for learning purposes (Kolb, 2011), which suggest more opportunities for sustainable use if similar projects are undertaken. As the availability of online resources, and types of cell phone ownership vary across geographic settings, language teachers in other locations should explore resources they have available that can assist them in the integration of mobile devices into their instruction.

The teacher participant expressed that some of her co-workers were interested in integrating cell phone use, but did not have any formal training on how to do it. Therefore, findings from this study can help design projects where more knowledgeable teachers can work with the administration in order to develop instructional materials to provide professional development to other teachers, taking into account the factors that affect the integration of mobile technologies in specific settings. In developed countries like the United States there still are locations where technology is limited, therefore, findings of this study could be transferable to settings with similar characteristics. For instance, many states have implemented “bring your own device” (BYOD) programs, where students are encouraged to take to school their mobile devices and use them for learning purposes. BYOD programs are being used as a way to introduce affordable technologies in the classrooms. In the language learning side, findings from this study provide some guidelines that can be transferred and applied in settings where English

language learners are at disadvantage in technology access in the classroom. In addition, not only in limited-technology classrooms, but also in rich-technology environments, teachers could make use of mobile devices as complement to develop tasks that expose language learners to more authentic communicative situations. As with any technology, it is not the mobile device itself that enhances teaching or learning, but rather the pedagogical use given to it.

Finally, as stated in chapters one and two, MALL research has become popular across European and Asian countries, and to some extent in the United States and Mexico, but its presence in Latin America is still limited (Jara et al., 2012). Therefore, another contribution of this dissertation is to inform MALL research, in particular in foreign language education in Latin America and the Caribbean.

Limitations and Delimitations of the Study

This study also had several limitations and delimitations that need to be considered as findings are relevant to this specific setting, and its transferability to another EFL classroom setting in the Dominican Republic and other locations may be limited. The participants were bounded to English language students attending the IEP center at a public university. These participants' behaviors and perceptions may differ if a similar study is conducted in an IEP located in a different center. Therefore, the data collected would be applicable exclusively to this setting with students and a teacher with similar characteristics to the participants in this study. In addition, this study depended on motivated participants. The teacher participant had already a high interest in trying new

approaches related to technology in her instruction. She had obtained a degree in bilingual education with a focus on technology integration, so her educational background could have been a factor that influenced her motivation to participate in this research, and to encourage her students to use their cell phones in learning activities.

This qualitative case study, like other research methods, had its limitations in the data collection procedures. I had anticipated conducting classroom observations at least once a week throughout the 8 weeks of data collection, but only five formal classroom observations were possible, due to circumstances beyond the teacher's control. However, I took detailed field notes and interacted as much as possible with the participants the days I observed classes. The findings from the observations were triangulated with the interviews and the responses from the questionnaires. In terms of how many students actually completed the questionnaires, the class consisted of 23 students, but when I conducted the prequestionnaires, only 21 were returned. Because I collected the prequestionnaires several days after I handed them to the students, it is possible that some students lost them. The last day of classes, out of the 23 students, two had left the classroom when I distributed the postquestionnaires and one student left and did not return the document. As a result, 20 questionnaires were returned.

Finally, this case study was comprised of a small sample, and focused on a particular phenomenon or situation and did not attempt to be generalized to other studies. However, the value of these types of studies is that "they do give indications of which aspects learners may value the most, namely real communication, multimodality, and the chance to make their learning more personally relevant" (Kukulska-Hulme, 2013, p. 4).

These aspects can be transferable to other participants and to other settings.

In terms of delimitations, this study did not intend any of the following: (1) to measure the learning achievement of the student participants, (2) to evaluate the effectiveness of the learning activities implemented, (3) to compare which type of cell phones were more appropriate to perform the learning activities, or (4) to compare mobile devices' effectiveness against other technologies, such as laptops or desktop computers.

Recommendations for Future Research and Conclusion

As the smartphone market is increasing rapidly among the young adult student population and across socioeconomic status, future research in the field needs to consider the capabilities provided by these more modern mobile devices (Bateson & Daniels, 2012). In addition to this, mobile apps offer a wide range of opportunities for learning from students' own devices, but little research has focused on that (Steel, 2012). As students' cell phones' properties may vary because of brands and models, future research should consider a device-independent design. That is, designing instructional activities that can be carried out with different type models of cell phones and other mobile devices, such as tablets (Zeng & Luyegu, 2010). In this way, teachers and students would have the opportunities to explore other ways to incorporate technology in the EFL classroom.

In a Dominican context in particular, this study aims to provide insight on how cell phones can be integrated as educational tools to face the limited technology access in an EFL classroom. This integration may be conditioned by physical and social factors that differ from other classrooms. Future research should look into Dominican EFL teachers'

and students' perspectives on cell phone appropriation in other settings, and include the views of coordinators, and other authorities representing the administration within the participating educational institution. This case study explored how the teacher and students appropriated cell phones in a Dominican EFL classroom context, but did not go beyond the participants' perceptions to attempt to measure learning gains. Once English language teachers, the administration, and other shareholders have come to an agreement in facilitating training in using cell phones as learning tools, mixed-methods or quantitative methods can be considered. These types of approaches would allow measuring actual learning gains, by collecting data from a larger and representative sample of participants from IEP centers and other settings in the Dominican Republic. This research did not compare the teacher and students appropriating cell phones with a control group. However, findings can inform future research where EFL teachers who have a less strong technology background can design more structured MALL activities, and compare perceptions on the effectiveness of these activities with traditional approaches. Research designs such as longitudinal studies would also be suitable to understand the eventual impact and outcomes of cell phones integration in adult EFL classrooms in the Dominican Republic (Ducate & Lumicka, 2013).

This dissertation provided some understanding on how teacher and students can appropriate their own mobile devices to support educational practices within the opportunities and limitations present in their social and physical contexts. If properly integrated, cell phones and other mobile devices can contribute to develop communicative competence among language learners, both as alternative resources in EFL classrooms

with limited technology, and as counterpart for instructional activities in rich-technology classrooms. Regardless of technology access in EFL instruction in developed and developing countries, mobile learning implementation cannot be seen as a panacea (Burston, 2014), and it cannot replace conventional classroom instruction, but complement it. The rapid development of technology integration in the EFL field, and the shift from direct-instruction to more learner-centered approaches have brought changes into the traditional teaching-learning process, which provide language learners with more real-world experiences. Therefore, focus must be on learning and not the technology, thus educators have the responsibility to determine when and how a given technology, including cell phones, can support, complement and enhance the achievement of instructional objectives. This responsibility must also be passed to students to help them meet their learning needs.

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APPENDICES

Appendix A

Student Preinterview Protocols (English and Spanish)

STUDENT PREINTERVIEW PROTOCOL

1. How much access do you have to technology?
2. What type of mobile devices do you own?
3. What cell phone functions do you use more often? Less often?
4. What type of activities do you usually do with your mobile device(s)?
5. What are your thoughts on using cell phones as educational tools inside the classroom? Outside the classroom?
6. How would you use /have you used your cell phone to create language learning opportunities on your own initiative?
7. Describe how have any of your teachers have integrated cell phone use to expand the English language instruction
8. What do you consider the biggest obstacles and/or challenges that EFL teachers face in trying to implement the use of cell phones into regular classroom instruction?
9. Additional thoughts or comments about the use of cell phones as learning tools that you'd like to share?

Probes or follow-up questions were asked when appropriate depending on students' responses.

*Additional individual questions driven by responses to student prequestionnaire
The order and wording of the questions varied as the interview developed*

STUDENT PREINTERVIEW PROTOCOL (SPANISH VERSION)

1. ¿Cuánto acceso tienes a la tecnología?
2. ¿Qué tipo de dispositivos móviles posees?
3. ¿Cuáles son las funciones en tu celular que utilizas con más frecuencia? Con menos frecuencia?
4. ¿Qué tipo de actividades sueles hacer con tu dispositivo móvil? :
5. ¿Cuál es tu opinión sobre el uso de teléfonos celulares como herramientas educativas en aula? Fuera de aula?
6. ¿Cómo usarías/ has utilizado tu teléfono celular para crear oportunidades de aprendizaje de idiomas por tu propia iniciativa?
7. Describe cómo alguno de tus profesores (si alguno) han integrado el uso de los celulares para la enseñanza en clases de inglés.
8. ¿Cuáles consideras los mayores obstáculos o desafíos que los profesores de inglés enfrentan al tratar de implementar el uso de teléfonos celulares en instrucción en el aula?
9. Alguna opinión adicional, percepciones o comentarios relacionados con el uso de teléfonos celulares como herramientas para el aprendizaje en general?

Appendix B

Student Postinterview Protocols (English and Spanish)

STUDENT POSTINTERVIEW PROTOCOL

1. What cell phone features in your cell phone did you use for language learning activities?

What functions did you find the most useful? Why?

What functions did you find less useful? Why

2. Please describe how the teacher used her cell phone for educational purposes inside the classroom?
3. Please describe how you used your cell phones as learning tools inside the classroom and for homework assignments for teacher-guided activities?

Which additional technology resources (if needed) were used to support these learning activities?

4. Please describe what type of learning activities you implemented on your own initiative using your cell phone inside the classroom.
5. Please describe what type of learning activities you implemented using your cell phone outside the classroom.
 - a) How often did you engage in these activities?
 - b) In what places did you usually engage in these activities?
6. What do you feel were the biggest benefits of using cell phones in your English class during this cycle?
7. What do you feel were the biggest obstacles or challenges using cell phones in your English class during this cycle?

Probes or follow-up questions were asked when appropriate depending on students' responses.

*Additional individual questions driven by responses to student prequestionnaire
The order and wording of the questions varied as the interview developed*

STUDENT POSTINTERVIEW PROTOCOL (SPANISH)

1. ¿Qué funciones de tu teléfono celular usaste con más frecuencia para las actividades de aprendizaje de inglés?

¿Cuáles funciones del celular encontraste más útiles para estas actividades? Por qué?

¿Cuáles funciones encontraste menos útiles? Por qué?

2. Por favor describe como tu profesor usó su celular para propósitos educativos dentro del aula?
3. Por favor, describe qué tipo de actividades realizaste en el aula con la guía del profesor, y para las tareas usando tu teléfono celular.

¿Qué tecnología adicional (si alguna) necesitaste para implementar estas actividades?

4. Por favor describe qué tipo de actividades de aprendizaje implementaste de tu propia iniciativa usando tu teléfono celular dentro del aula.
5. Por favor describe qué tipo de actividades de aprendizaje implementaste de tu propia iniciativa usando tu teléfono celular fuera del aula.

¿En qué lugares usualmente hacías estas actividades?

6. ¿Cuáles consideras los mayores obstáculos o desafíos al integrar teléfonos celulares en tu clase de inglés?
7. ¿Cuáles piensas fueron los mayores beneficios o las oportunidades en el uso de teléfonos celulares en tu clase de inglés?

Appendix C
Teacher Preinterview Protocol

TEACHER PREINTERVIEW PROTOCOL

1. How long have you been an English teacher?
2. What type of preparation, informal and formal, do you have as an EFL teacher?
3. How much access to technology do you have, in general?
4. What are the functions in your cell phone that you use most of the time?
5. What other mobile devices do you own?
6. Have you gotten any formal professional development in the use of technology for educational purposes?
7. For your own purposes, what type of technologies have you used inside the classroom?
8. What other technologies have you used to support your teaching?
9. What advantages have you found in integrating these devices for your students?
10. What type of challenges have you found in integrating these devices for your students?
11. Is there anything else you'd like to add? Any additional comment?

Appendix D

Teacher Postinterview Protocol

TEACHER POSTINTERVIEW PROTOCOL

1. How has your opinion as a teacher changed about using cell phones in the classroom to complement your instruction?
2. Which cell phone functions did you use for your activities, and for what purpose?
3. Can you describe the activities that you were able to implement with these cell phone functions?
4. What other activities besides the ones that you developed, you saw students doing in the classroom with their cell phones?
5. Is there any other activities that you thought of, that you would have implemented if you had had time?
6. In general, in what ways did you motivate students to integrate cell phones into learning activities, either directed by you or so that they could use them on their own?
7. What was the difference between this type of activity, the one implemented with the cell phones, and the regular or traditional activities students are used to work on?
8. What do you consider were the biggest benefits and advantages to integrate cell phone use into educational context?
9. What do you consider were the biggest challenges or limitations to integrate cell phone use into educational context?

*The order and wording of the questions varied as the interview developed
Probes and follow-up questions were added to have the interviewee elaborate on the responses*

Appendix E

Student Prequestionnaires (English and Spanish)

STUDENT PREQUESTIONNAIRE

Thank you for collaborating with this study. Please read before you complete the questionnaire:

For the purpose of this study, key terms in this questionnaire are defined as follows:

Mobile device: is a small electronic device that we can carry with us all or most of the time, and include cell phones (all types), mp3 players, iPods and tablets.

Regular cell phones: low-cost cell phones with basic features that include voice messaging, short-message-service (or text messaging), camera, video recording, Bluetooth and sometimes Internet access for browsing and instant messaging.

Smartphones: integrated communications devices that combine telephony, computing, messaging, and multimedia. They include basic cell phone features and a greater storage and faster Internet connection. These devices also include operating system (MAC, Windows, Android, and Blackberry

I. Demographic Questions

1. *What type of higher education institution do you attend?*
 - a. Private university (which one?)_____
 - b. State University (UASD)
 - c. Other (Please specify)_____
2. *Which is your current educational level at the university?*
 - a. Freshman (1st year)
 - b. Sophomore (2nd year)
 - c. Junior (3rd year)
 - d. Senior (4th year)
3. *What is your age range?*
 - a. 18-20
 - b. 21-25
 - c. 26-30
 - d. Above 30
4. *What is your gender?*
 - a. Male
 - b. Female

II. Use of mobile technology in general:

5. *I have used (more than once) the following mobile technologies (mark all that apply).*
 - a. Regular cell phone
 - b. Smartphone (e.g., iPhone, Blackberry, Android smartphone)
 - c. mp3 player (including an iPod)

- d. eBook reader
- e. Tablet (including an iPad)
- f. Other (please specify)_____
- g. None of the above

6. *Currently, I own the following mobile technologies (mark all that apply).*
- a. Regular cell phone
 - b. Smartphone
 - c. mp3 player (including iPods)
 - e. eBook reader
 - f. Tablet (including iPads)
 - g. other_____
 - h. I don't have any of the above at the moment (then skip to Section III, questions 12-19)

7. *The brand and model of my phone is _____.*

8. *My mobile plan (text and minute talk) is:*
- a. Prepaid (I buy a card to put credit on my phone to call and text)
 - b. Postpaid (I am subscribed to a plan that I pay every month)
 - c. Other (please specify)_____

9. *I access Internet in my cell phone using:*
- a. Prepaid social network only (I buy a card to put credit on my phone for social networks only)
 - b. Prepaid full Internet access (I buy a card to put credit on my phone for full Internet)
 - c. Postpaid (I am subscribed to a data plan that I pay every month)
 - d. Other (please specify)_____

10. *The following table contains a list of cell phone functions. Please check with an "X" the box under the statement next to the function that best applies to your cell phone use.*

Mobile Functions & Activities	I don't have this function in my phone	I have this function in my phone but I don't know how to use it	I have this function in my phone but I rarely use it	I usually use this function in my phone	I don't know if I have this function in my phone
Make & receive Phone calls					
Make & receive text SMS					
Make & receive MMS					
Take pictures					
Record & watch videos					
Web enabled (Wi-Fi or mobile data) to browse for information					

Mobile Functions & Activities	I don't have this function in my phone	I have this function in my phone but I don't know how to use it	I have this function in my phone but I rarely use it	I usually use this function in my phone	I don't know if I have this function in my phone
Send & receive emails					
Record & upload voice recorder (audio file)					
Use GPS or mobile maps					
Access social network sites (e.g., Facebook, Twitter)					
Send & receive Bluetooth information					
Microsoft Office (e.g., word, PowerPoint, excel)					
PDF Reader					
Read e-books					
Listen & download songs through MP3 player					
Listen to radio channels					
Play & download offline games					
Play online games					
Use phone as file storage					
Use phone calendar					
Use calculator					
Use phone note taking					
Use educational apps					

11. I usually use my cell phone during the following situations (Check all that apply):

- a. Travelling/commuting in public transport
- b. Walking
- c. Around the house
- d. Leisure time
- e. During school breaks
- f. Working out
- g. Other (please specify) _____

12. Please check with an "X" the box under the statement next to the frequency of use that best applies. Use the following scale: never, rarely (once or twice a month) sometimes (once or twice a week), often (e) (more than twice a week), and almost daily.

Using mobile technologies for learning purposes	Never	Rarely	Sometimes	Often	Almost daily
In my English language classes, I have participated in learning activities that involved the use of cell phones in real →world application activities.					
At least one of my English teacher have promoted, monitored, and modeled the ethical use of cell phones in their classrooms for learning purposes					
I have used my cell phone outside the classroom to learn and practice English on my own initiative					
I am likely to use my cell phone when I am outside the classroom to (a) collaborate with other students, and/or research topics of personal interest related with the English language.					
I am likely to participate in teacher- guided activities in the classroom where I can use my cell phone					

12. *I would be willing to provide my cell phone number to my English teacher for class related purposes*

- a. Yes
- b. No
- c. Not sure

Open Ended Questions

18. *What are your thoughts on using your own cell phone **inside** the classroom for learning activities to support the English class?*

19. *What are your thoughts on using your own cell phone **outside** the classroom to support the instruction that took place in class?*

20. *If you have the opportunity to use your cell phone to enhance your language learning, how would you use it?*

Would you like to participate in three personal interviews to expand on your answers?

_____ Yes, I would also like to participate in the personal interviews. Please contact me.

_____ No, thanks. I would only prefer to complete the postquestionnaire.

E-mail address:

Phone number:

Thanks for your cooperation!

STUDENT PREQUESTIONNAIRE SPANISH

Gracias por colaborar con este estudio. Para mejor comprensión del cuestionario, los siguientes términos serán definidos:

- *Dispositivo móvil*: es un pequeño dispositivo electrónico que podemos llevar con nosotros todo el tiempo o la mayor parte del tiempo. Por ejemplo: teléfonos celulares (todo tipo), reproductores de mp3, iPods, y tablets (incluyendo iPads).
- *Teléfono celular regular*: celulares de bajo costo con características básicas que incluyen llamadas de voz, servicio de mini-mensajes, cámara fotográfica, grabación de vídeo, Bluetooth y, a veces, acceso a Internet para navegar y mensajería instantánea.
- *Smartphones*: integra dispositivos de comunicación que combinan telefonía, informática, mensajería y multimedia. Incluyen las características básicas del teléfono celular, mayor capacidad de almacenamiento, y más rápida conexión a Internet. Estos dispositivos también incluyen sistema operativo (Windows, MAC, Android y Blackberry).

I. Datos demográficos

1. *¿A qué tipo de institución de educación superior asistes?*

- a. Universidad privada (¿cuál?) _____
- b. Universidad estatal (UASD)
- c. otros (especifique) _____

2. *¿Cuál es tu nivel educativo actual en la universidad?*

- a. primer año
- b. segundo
- c. tercer año
- d. cuarto año
- e. graduado

3. *¿Cuál es tu rango de edad?*

- a. 18-20
- b. 21-25
- c. 26-30
- d. mayor de 30

4. *¿Cuál es tu género?*

- a. hombre
- b. mujer

II. Uso de la tecnología móvil:

5. *He usado (más de una vez) las siguientes tecnologías móviles (marque todas las que apliquen).*
- teléfono celular regular
 - Smartphone (Por ej.: iPhone, BlackBerry, Android)
 - mp3 player (incluyendo iPods)
 - eBook reader (Por ej.: Kindle, Nook)
 - tablet (incluyendo iPads)
 - otros (especifique) _____
 - ninguna de las anteriores
6. *En la actualidad, tengo los siguientes dispositivos móviles (marque todas las que apliquen).*
- teléfono celular regular
 - Smartphone
 - mp3 player (incluyendo iPods)
 - e-book reader (ejemplo: Kindle, Nook, etc)
 - tablet (incluyendo iPads)
 - Otra _____
 - no tengo ninguno de los anteriores por el momento (responder de la pregunta 12 en adelante)
7. *La marca y modelo de mi teléfono es _____*
8. *Mi plan móvil (para hablar y enviar mini-mensajes) es:*
- Pre-pago (recargo mi celular con una tarjeta para llamar y enviar mini-mensajes)
 - Post-pago (Estoy suscrito a un plan que pago mensualmente)
 - Otro (especificar) _____
9. *Yo acceso a Internet en mi teléfono celular usando:*
- Solo redes sociales prepago (recargo mi celular con data pero solo para redes sociales)
 - Prepago acceso completo a Internet (recargo mi celular con tarjeta para navegar Internet)
 - Post-pago (yo estoy suscrito a un plan de data que pago cada mes)
 - Wi-Fi en mi casa u otras redes privadas a la cual tengo acceso (ex. casa de amigo o familiar)
 - Wi-Fi en lugares públicos
 - Otros (especificar) _____

10. La siguiente tabla contiene una lista de diferentes funciones de un teléfono celular. Marca con una "X" debajo a la función que mejor se aplica a su uso del teléfono celular.

Funciones móviles & actividades	No tengo esta función en mi celular	Tengo esta función en mi celular, pero no sé cómo usarla	Tengo esta función en mi celular y sé usarla, pero casi no lo hago	Casi siempre utilizo esta función en mi celular	No sé si tengo esta función en mi celular
Hacer y recibir llamadas telefónicas					
Enviar y recibir mini-mensajes					
Enviar y recibir mensajes multimedia					
Tomar fotos					
Grabar video					
Grabar audio					
Navegar en Internet					
Enviar y recibir e-mails					
Usar GPS o mapas móviles					
Acceso de redes sociales (por ejemplo Facebook, Twitter)					
Microsoft Office (Microsoft word, PowerPoint, excel)					
Lector de PDF					
E-book reader app					
Descargar canciones					
Escuchar canciones en reproductor de música					
Escuchar estaciones de radio online					
Descargar juegos					
Jugar juegos online					
Teléfono para almacenar datos					
calendario					
calculadora					
agenda					
Apps educativas					
Otra _____					

11. Utilizo mi celular con regularidad en las siguientes situaciones (marque todas las que apliquen):

- a. Mientras me traslado (en transporte público; como pasajero en vehículo privado)
- b. Mientras me traslado a pie
- c. Cuando estoy en la casa
- d. Tiempo de ocio
- e. Durante el break entre clases
- f. Mientras me ejercito
- g. Otros (especificar) _____

12. Por favor marca con una "X" en el cuadro asignado a la frecuencia de uso que mejor aplique a tu situación. Usa la siguiente escala: nunca, pocas veces (una vez o dos veces al mes), a veces (una vez o dos veces por semana), a menudo (más de dos veces por semana), o diario/casi a diario.

Utilizando tecnologías móviles para propósitos de aprendizaje	Nunca	Pocas Veces	A veces	A menudo	Diario/casi a diario
En mis clases de inglés, he participado en actividades que incluyen el uso de teléfonos celulares que aplican a situaciones de la vida diaria.					
Al menos uno de mis profesores de inglés ha enseñado y promovido el uso ético de los teléfonos celulares en las aulas para propósitos de aprendizaje.					
He utilizado mi teléfono celular fuera del aula para aprender y practicar inglés por mi propia iniciativa					
Es probable que use mi teléfono celular fuera de clases para colaborar con otros estudiantes, o investigar temas de interés personal relacionado con el idioma inglés.					
Es probable que participe en actividades guiadas por mi profesor, donde pueda usar mi teléfono celular.					

12. Estaría dispuesto/a darle mi número de teléfono a mi profesor de inglés para fines relacionados con la clase.

- a. Sí
- b. No
- c. No estoy seguro/a

Preguntas abiertas

18. ¿Cuál es tu opinión acerca de usar tu teléfono celular **dentro** del aula para actividades de aprendizaje que complementen la clase de inglés?

19. *Cuál es tu opinión acerca de usar tu teléfono celular **fuera** del aula para actividades de aprendizaje para complementar la lección del día de tu clase de inglés?*

20. *Si tuvieras la libertad de utilizar tu teléfono celular por tu cuenta para **fin**es educativos, ¿cómo lo usarías?*

¿Quieres participar en dos entrevistas personales y varias conversaciones informales para hablar más sobre el tema y tus respuestas?

___ Sí, también me gustaría participar en las entrevistas personales. Póngase en contacto conmigo.

___ No, gracias. Preferiría solo participar en las actividades del aula y completar el cuestionario final

Dirección de correo electrónico:

Número de teléfono:

☺ *Gracias por tu cooperación* ☺

Appendix F
Student Postquestionnaire

STUDENT POSTQUESTIONNAIRE

This postquestionnaire is about how you were able to use cell phones for educational purposes inside and outside the English classroom during this cycle. Please read carefully and respond each item.

During **this cycle**, when necessary, to assist some of the learning activities I used:

- a. My smartphone b. My regular cell phone c. ___ Someone else's smartphone

- I. In the table below, use the following scale to select the most appropriate option: **Almost daily/Daily, often** (at least 3 times a week), **sometimes** (1 to 2 times per week), **rarely** (1 to 2 times per month), or **never**.

I used cell phones to assist my English language learning activities in this way:	Almost daily/Daily	Often	Sometimes	Rarely	Never
Using an offline dictionary app (looking up meaning or pronunciation)					
Using Google search					
Using Google translator					
Recording a video of me or other people speaking in English					
Recording audio of me or other people speaking in English					
Posting in English to a social network (Ex. twitter/Facebook)					
Listening to music in English online or in my cellphone music player					
Taking pictures of information on the board					
Taking pictures outside the classroom (for personal learning purposes)					
Typing notes on my cellphone (notepad, calendar, etc)					
Collaborating /communicating with others in using a social network (whatsapp, FB, etc)					
Accessing websites from my cell phone to complete homework assignments					
Please include any other activity you did with your cell phone (or someone else's cell phone) that was not listed above:					

II.

III. Please circle the most appropriate opinion about the statements below:

No.	As an English language student during this cycle:	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	In general, it was helpful to use cell phones to complement what I learned in class, and to reinforce specific classroom content.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
2.	I was comfortable learning English with the use of cell phones inside the classroom	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
3.	I enjoyed the use of cellphones in my classes because it promoted creativity and collaboration with my classmates.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
4.	I felt motivated to use my cellphone outside the classroom to research topics of personal interest related to English language learning.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
5.	I felt motivated to use my cellphone outside the classroom to collaborate or communicate with others using English	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
6.	Using cellphones provided more opportunities to learn and study in places I couldn't normally learn and study in.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
7.	It was easier to complete some classwork and assignments using my cellphone	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
8.	Integrating cell phones into some of the activities helped complete the learning objective in mind	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
9.	Distraction was not a problem when using cellphones as learning tools in the classroom.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
10.	The limited Internet access make difficult the use cellphones as learning tools inside the classroom.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
11.	Although Internet access in the classroom was a limitation, the teacher used strategies that helped us complete the activities successfully.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
12.	I feel that my teachers would be more willing to facilitate the effective use of cellphones in their classrooms if cell phones were allowed in my English classes.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
13.	Teachers should teach students how to appropriately use cellphones in language learning activities	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>
14.	I would find useful that other teachers integrate the use of cell phones in classroom activities like my teacher did in this class.	<i>Strongly agree</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Strongly disagree</i>

IV. Open Ended Questions

1. Which activities directed by the teacher using cell phones in the classroom did you find the **most useful**? Why?

2. Which activities directed by the teacher using cell phones in the classroom did you find **the least useful**? Why?

3. What do you feel were the biggest benefits or advantages of using cell phones as learning tools during this cycle?

4. What do you feel were the biggest limitations or disadvantages of using cell phones as learning during this cycle?

Thanks a lot for your cooperation!

Appendix G
Approved Letter of Request



28 de Enero del 2014

Dra. Ligia Amada Melo
Ministerio de Educacion Superior, Ciencia y Tecnología
Ciudad.

Distinguida Sra. Ministra,

Soy estudiante de doctorado de cuarto año en el departamento de Tecnología Educativa y Ciencias del Aprendizaje (Instructional Technology and Learning Sciences) en la Universidad Estatal de Utah. Fui una de las estudiantes agraciadas con una beca de maestría en el 2008 por parte de la MESCYT. Mi área de interés es el uso de los dispositivos móviles en la enseñanza de idiomas, particularmente el idioma inglés.

Ya que este semestre debo defender mi propuesta de tesis doctoral, me dirijo a usted para solicitar su aprobación a fin de realizar mi estudio de tesis con la participación de estudiantes del programa de inglés de inmersión que iniciara este año en el país.

El propósito general de mi tesis doctoral es explorar que tipo de actividades el maestro de inglés puede implementar con sus estudiantes dentro y fuera del aula. Igualmente, espero analizar la percepción del maestro y los estudiantes sobre la integración de teléfonos celulares como herramientas educativas.

Estoy interesada en esta área ya que muchos estudiantes de inglés tienen acceso limitado a la tecnología para asistir el aprendizaje del idioma. Sin embargo, el aumento en el uso de teléfonos celulares entre la población joven adulta de nuestro país puede ser una alternativa para abordar esta desventaja. Según estudios realizados, el uso didáctico de móviles dentro y fuera del aula tiene un impacto positivo en el aprendizaje de los estudiantes.

Por favor encontrar adjunto un resumen en español de mi propuesta de tesis doctoral. Agradezco de antemano su atención, y quedo a la espera de su respuesta. Sin otro particular por el momento me despido.

Saludos Cordiales,

Gisela Martiz

Appendix H

Student Letter of Information (English and Spanish)



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and Learning Sciences
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LETTER OF INFORMATION

Cell phones as Language Learning Tools in a Dominican Context: A Case Study

Introduction/ Purpose I, Gisela Martiz, doctoral student under the supervision of Dr. Mimi Recker in the Department of Instructional Technology and Learning Sciences at Utah State University (USU), will be conducting a dissertation study to investigate the affordances that cell phones offer as educational tools to a Dominican EFL teacher and his students at the English Immersion Program (EIP). The study will also examine how the participants appropriate these mobile devices for language learning activities inside and outside the classroom. You and your English classmates have been invited to take part because you are students in the EIP program at UASD. There will be approximately 22 participants in this research study, which has been approved by Dr. Ligia Amada Melo, Minister of Higher Education, Science and Technology.

Procedures If you agree to be in this research study, you will fill out a questionnaire about your use of cell phones for different activities, and your experiences in their educational use. You also may be invited to participate in two individual interviews related to the use of cell phones for learning purposes. Interviews will last about 45 minutes and will take place at a location and time of your convenience. I will record the interviews with my cell phone voice recorder. You may also choose to participate in several informal conversations (at least one per week) about your thoughts and experiences using cell phones for learning purposes during this study. In addition, if you agree to participate in this study, I will document your learning activities with cell phones in a series of observations I will conduct in your English class, with the consent of your teacher. At the end of the cycle I will ask you to complete another questionnaire about the different educational uses of your cell phone during this study. The questionnaire will also ask your opinion about the usefulness of learning activities you implemented inside and outside the classroom.

Risks Participation in this research study involves minimal risk. Neither the questionnaires nor the interviews will request any information that could invade your privacy. The interviews will be audio-recorded, and risks will be reduced by avoiding any type of questions that may reveal your identity. During our informal conversations, I will take some notes with paper and pencil if necessary. All the information that you provide will be confidential, and any data that can directly identify you will be removed. The notes taken during classroom observations will refer only to the learning activities with the use of cell phones, or related with the use of a cell phone feature. No personal identification will be included in the observation notes.

Benefits There may not be direct benefits from this research study. However, if you agree to participate, you will help me find out the potential of cell phones to be integrated in language learning activities by teachers, and students like you in a context where other technologies are limited. With your collaboration, you will contribute to foster educational research to improve English language education for Dominican learners.



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LETTER OF INFORMATION

Cell phones as Language Learning Tools in a Dominican Context: A Case Study

Explanation & offer to answer questions I have explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach me at 809-805-7815 (mobile) or at my email address (gisela.martiz@gmail.com).

Voluntary nature of participation and right to withdraw without consequence Participation in research is entirely voluntary. You may decline to participate, refuse to answer any questions or withdraw at any time by contacting me without any negative impact on your performance in this English class.

Confidentiality Research records will be kept confidential. Only the principal investigator and I will have access to the data which will be kept in a password protected laptop computer. To protect your privacy, I will remove any identifiable information from study documents and will replace them with a numerical identifier or pseudonym (fake name). Identifying information will be stored separately from data and will be kept private. Your real name will not be used in association with this study. Records could be used for future related research, but numerical identifiers will be destroyed upon completion of this study

IRB Approval Statement The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

Investigator Statement "I certify that the research study has been explained to the individual, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

Signature of Researcher(s)

Mimi Recker
Principal Investigator
(mimi.recker@usu.edu)

Gisela Martiz
Student Researcher
(435-764-2891)/ 809-805-7815
(gisela.martiz@gmail.com)



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CARTA DE INFORMACIÓN

Cell phones as Language Learning Tools in a Dominican Context: A Case Study

Introducción/Propósito Yo, Gisela Martiz, estudiante de doctorado bajo la supervisión de la Dra. Mimi Recker en el Departamento de Tecnología Educativa y Ciencias del Aprendizaje en Utah State University (USU), llevaré a cabo un estudio de tesis para investigar las oportunidades que ofrecen los teléfonos celulares como herramientas educativas para un profesor de inglés y sus estudiantes en el programa de Inglés de Inmersión. Mi estudio investigará cuáles son los posibles usos que tanto el profesor como los estudiantes pueden darle a los teléfonos celulares para implementar actividades de aprendizaje dentro y fuera del aula. Tú y tus compañeros en esta clase de inglés han sido invitados a participar porque son estudiantes en el programa de inmersión de inglés en el recinto de la UASD. Habrá unos 22 participantes en este estudio de investigación, el cual ha sido aprobado por la Dra. Ligia Amada Melo, Ministra de Educación Superior, Ciencia y Tecnología.

Procedimientos Si estás de acuerdo en participar en este estudio de investigación, llenarás un cuestionario de cómo usas tu celular para diferentes actividades, y tu experiencia al usarlo con propósitos educativos. También podrías ser invitado a participar en dos entrevistas individuales relacionadas con el uso de teléfonos celulares para propósitos de aprendizaje. Las entrevistas tendrán una duración de unos 45 minutos aproximadamente y se llevarán a cabo en el lugar y la hora de tu preferencia. Grabaré la entrevista con mi teléfono celular. Igualmente, y de un modo más informal, podríamos conversar al menos una vez por semana, para que compartas tu opinión y experiencias sobre cómo usas tu celular para aprender. Además, si estás de acuerdo en participar en este estudio, incluiré tus actividades de aprendizaje con los teléfonos celulares en una serie de observaciones que llevaré cabo en tu clase de inglés, con el consentimiento de tu profesor. Al finalizar este nivel, te solicitaré que llenes otro cuestionario sobre como usaste tu celular para fines educativos durante este estudio. El cuestionario también pedirá tu opinión sobre los beneficios de las actividades de aprendizaje que implementaste dentro y fuera del aula.

Riesgos La participación en este estudio implica muy poco riesgo. En los cuestionarios o las entrevistas no se pedirá información que pueda invadir tu privacidad. Las entrevistas serán audio-grabadas, y para reducir cualquier sentimiento de incomodidad, evitaré hacer preguntas que puedan revelar tu identidad. Toda la información que proporciones será confidencial, y eliminaré cualquier dato que pueda identificarte. Las notas tomadas durante las observaciones en el aula se referirán únicamente a las actividades de aprendizaje con el uso de celulares, o relacionadas con el uso de alguna función del teléfono celular. Ninguna identificación personal se incluirá en las notas de observación.

Beneficios Puede ser que no haya beneficios directos al participar en este estudio. Sin embargo, si aceptas participar, me ayudarás a examinar el potencial que tienen los teléfonos celulares para que profesores, y estudiantes como tú puedan utilizar estas tecnologías en actividades educativas. Con tu



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colaboración, contribuirás a fomentar la investigación educativa para mejorar la enseñanza de idiomas para estudiantes dominicanos.

Aclaraciones y solicitud de respuestas Yo, Gisela Martiz he explicado este estudio de investigación y respondido tus preguntas. Si tienes otras preguntas relacionadas con la investigación, puedes comunicarte conmigo al 809-805-7815, o a mi correo electrónico (gisela.martiz@gmail.com).


Carácter voluntario de la participación y derecho a retirarse sin consecuencias Participar en esta investigación es completamente voluntario. Puedes abstenerte de participar o responder alguna pregunta, o salirte del estudio en cualquier momento, contactándome, sin que esto afecte tu rendimiento en la clase de inglés.

Confidencialidad Los datos de esta investigación se mantendrán confidenciales. Sólo la investigadora principal y yo tendremos acceso a los datos, los cuales mantendré en mi laptop protegida con contraseña. Para proteger tu privacidad, toda información personal e identificable será extraída de los datos del estudio y reemplazada con un identificador numérico o un seudónimo (nombre falso). Esta información se almacenará separada de los datos y se mantendrá privada. Tu nombre verdadero no se utilizará en asociación con este estudio. Los datos podrían ser usados para estudios relacionados en el futuro, pero los identificadores numéricos serán eliminados al completar este estudio.

Declaración de aprobación IRB El Comité de Revisión Institucional para la protección de participantes en la Universidad Estatal de Utah ha aprobado este estudio de investigación. Si tienes alguna pregunta o inquietud relacionada con la investigación y quisieras contactar a alguien que no sea el equipo de investigación, puedes contactar al administrador del IRB al (435) 797-0567 o enviar un correo electrónico a irb@usu.edu para obtener información o para ofrecer alguna opinión.

Declaración del investigador "Yo certifico que este estudio de investigación ha sido explicado al(a) la estudiante, y que el/la estudiante entiende la naturaleza y finalidad, los posibles riesgos y beneficios asociados a participar en este estudio de investigación. Cualquier pregunta hecha ha sido respondida."

Firma de las investigadoras


Mimi Recker
Investigador principal
(mimi.recker@usu.edu)


Gisela Martiz
Estudiante Investigadora
(435-764-2891/809-805-7815)
(gisela.martiz@gmail.com)

Appendix I

Teacher Letter of Information



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LETTER OF INFORMATION

Cell phones as language learning tools in a Dominican Context: A Case Study

Introduction/Purpose I, Gisela Martiz, doctoral student under the supervision of Dr. Mimi Recker in the Department of Instructional Technology and Learning Sciences at Utah State University (USU), will be conducting a dissertation study to investigate the affordances that cell phones offer as educational tools to a Dominican EFL teacher and his students at the English Immersion Program (EIP). The study will also examine how the participants appropriate these mobile devices for language learning activities inside and outside the classroom. You have been invited to take part because you are a Dominican EFL teacher in the EIP program at UASD. There will be approximately 22 participants in this research study, which has been approved by Dr. Ligia Amada Melo, Minister of Higher Education, Science and Technology.

Procedures If you agree to be in this study, I will ask you to participate in two individual interviews (one at the beginning of the cycle, and another at the end) related to the use of cell phones for learning purposes. Interviews will last about 45 minutes and will take place at a location and time of your convenience. I will record the interview with my cell phone voice recorder. You may also choose to participate in informal conversations with me about your thoughts and reflections on designing and implementing learning activities with the use of cell phones. These conversations can also be held at a place and time of your convenience. You will have the option to document your thoughts and experiences on integrating cell phones into your teaching practices in a reflection journal. Your journal should only be related to the use of cell phones for learning activities. This may include what ideas you have for designing activities to target a learning objective, and the level of usefulness and or difficulty in implementing these activities. In addition, I will conduct a series of observations in your English class and will document the learning activities implemented with cell phones. I may also request a copy of your lesson plan to see the frequency with which you plan to implement cell phone related activities, and plan my classroom observations accordingly.

Risks Participation in this research study involves minimal risk. The interviews will be audio-recorded, so there is minimal risk of loss of confidentiality. This risk will be reduced by avoiding any type of questions that may reveal your identity, and not requesting any information that could invade your privacy. During our informal conversations, I will not audio-record but only will take some notes on paper. All the information that you provide will be confidential, and any data that can directly identify you will be removed. The notes taken during classroom observations will refer only to the learning activities with the use cell phones, or related with the use of a cell phone feature. No personal identification of you will be included in the observation notes.

Benefits There may not be direct benefits from this research study. However, if you agree to participate, you will help me find out what is the potential of cell phones to be integrated in language learning activities by teachers and students in a context where other technologies are limited. With your



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LETTER OF INFORMATION

Cell phones as language learning tools in a Dominican Context: A Case Study

collaboration, you contribute to foster educational research to improve English language education for Dominican learners and promote professional development among teachers.

Explanation & offer to answer questions I have explained this research study to you and answered your questions. If you have other questions or research-related problems, you may reach me at 809-805-7815 (mobile) or at her email address (gisela.martiz@gmail.com).

Voluntary nature of participation and right to withdraw without consequence Participation in research is entirely voluntary. You may decline to participate or withdraw at any time without consequence by contacting me.

Confidentiality Research records will be kept confidential. Only the principal investigator and I will have access to the data which will be kept in a password protected laptop computer. To protect your privacy, I will remove any identifiable information from study documents and will replace them with a numerical identifier or pseudonym. Identifying information will be stored separately from data and will be kept private. Your real name will not be used in association with this study. Records will be used for future related research, but numerical identifiers will be destroyed upon completion of this study.

IRB Approval Statement The Institutional Review Board for the protection of human participants at Utah State University has approved this research study. If you have any questions or concerns about your rights or a research-related injury and would like to contact someone other than the research team, you may contact the IRB Administrator at (435) 797-0567 or email irb@usu.edu to obtain information or to offer input.

Investigator Statement "I certify that the research study has been explained to the individual, and that the individual understands the nature and purpose, the possible risks and benefits associated with taking part in this research study. Any questions that have been raised have been answered."

Signature of Researcher(s)

Mimi Recker
Principal Investigator
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Gisela Martiz
Student Researcher
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Appendix J

Student Responses to Prequestionnaire Open Questions

19. What are your thoughts on using your own cell phone inside the classroom for learning activities to support the English class?
1. I think that with the proper tools we can take <i>a lot of advantage of cell phone use.</i>
2. In some cases it is very useful, but we can get <i>distracted very easily.</i>
3. It is quite good, as long as in that way we can improve <i>the quality of learning in the classroom</i>
4. <i>Quite good, sometimes it's necessary</i>
5. (I think) that would be very good because we could use it to <i>look up the meaning of new words</i>
6. It would be a step ahead to connect teachers and students more
7. I think that would be useful, because we'd have <i>access to more information</i>
8. I think it would be a <i>very good idea</i>
9. I think it would be important as <i>a complement for the class</i>
10. I think it is okay because in that way if we are confused we can make <i>use of Internet to find out</i>
11. To me it is good and very useful, because nowadays we have and interact with a lot of technology around us. We need to give it <i>a proper use in all aspects and places.</i>
12. I think it is <i>a good idea</i>
13. I think it would be quite useful because we <i>can learn more and in different ways as a group</i>
14. I think that it is very useful because I can make use of other tools <i>through my cell phone to expand the information that I already have</i>
15. I think it is good, only if we use it in a <i>moderate way and it doesn't disrupt the class</i>
16. I think it would be <i>something interesting.</i>
17. a good initiative, because students can <i>research something that they would like to, and get more involved with the language.</i>
18. The class would be very <i>interesting and more dynamic</i>
19. I think that it is okay since promoting technology with educational purposes <i>helps students to be more concerned about English and about learning</i>
20. It is a good idea because it turns our <i>mobile into a learning tool, and it's good for us because it is something we are used to use</i>
21. I think that would be <i>of a lot of help, and I agree with it.</i>

20. What are your thoughts on using your own cell phone outside the classroom to support the instruction that took place in your English class?
1. <i>There are many ways in which (they) can complement and (we) learn, it would be good that we were trained about it.</i>
2. <i>I agree with the use (of cell phones), since sometimes we have some doubts, and we are afraid to ask. With the use of a smartphone, we just use a translator or any other tool that can be of help</i>
3. <i>I do it very often and it has helped me a lot.</i>
4. <i>I always use my cell phone to learn English</i>
5. <i>It is good, because I can clarify any doubt I may have with the use of my cell phone/Internet</i>
6. <i>Class work is faster and easier</i>
7. <i>It is easier when we have to do homework</i>
8. <i>It is good, for example, it is very useful if we have a dictionary on the cell phone</i>
9. <i>I think that its use out of the classroom is also very important</i>
10. <i>I completely agree with this because in that way we can learn more through cell phones. We can do some feedback of what we have already studied in class.</i>
11. <i>It is totally helpful if we give it the right use.</i>
12. <i>I think that it is also a good idea, however, I don't have a smartphone</i>
13. <i>I believe that it would be very important because you expand your vocabulary</i>
14. <i>I think that it is a good method, since I always have my cell phone and I can practice at any time, read, listen, or look up something of interest, with something so simple and at hand.</i>
15. <i>It is advantageous because it would help me acquire knowledge and strengthen what I learned</i>
16. <i>It is a very good idea and easier because we always have our cell phones on us</i>
17. <i>(I think) that it is a good idea, because in that way we continue to enrich our vocabulary and knowledge</i>
18. <i>That would be interesting to me</i>
19. <i>Well, because it facilitates practicing the language even when we are outside the classroom</i>
20. <i>It is good for us because whenever we carry our phones (and) we use it to learn something new.</i>
21. <i>It is a good idea and I usually do it</i>

Appendix K





Student Perceptions On Cell Phone Educational Use

Student Perceptions On Cell Phone Educational Use

Item	Strongly agree	Agree	neutral	Disagree	Strongly disagree
	n (%)	n (%)	n (%)	n (%)	n (%)
In general, it was helpful to use cell phones to complement what I learned in class, and to reinforce specific classroom content.	12 (60)	8 (40)			
I was comfortable learning English with the use of cell phones inside the classroom	9 (45)	11(55)			
I enjoyed the use of cellphones in my classes because it promoted creativity and collaboration with my classmates.	9 (45)	8 (40)	2 (10)	1 (5)	
I felt motivated to use my cellphone outside the classroom to research topics of personal interest related to English language learning.	9 (45)	7 (35)	3 (15)	1 (5)	
Using cellphones provided more opportunities to learn and study in places I couldn't normally learn and study in.	10 (50)	9(45)		1(5)	
It was easier to complete some classwork and assignments using my cellphone	7 (35)	9 (45)	3 (15)	1(5)	
Integrating cell phones into some of the activities helped complete the learning objective in mind	8 (40)	8 (40)	3 (15)	1(5)	
Distraction was not a problem when using cellphones as learning tools in the classroom.	1 (5)	13 (65)	4 (20)	2 (10)	
The limited Internet access make difficult the use cellphones as learning tools inside the classroom.	9 (45)	9 (45)	1 (5)	1(5)	
Although Internet access in the classroom was a limitation, the teacher used strategies that helped us complete the activities successfully.	9 (45)	8 (40)	2 (10)	1(5)	
I feel that my teachers would be more willing to facilitate the effective use of cellphones in their classrooms if cell phones were allowed in my English classes.	8 (40)	8 (40)	4 (20)		
Teachers should teach students how to appropriately use cellphones in language learning activities	8 (40)	12 (60)			
I would find useful that other teachers integrate the use of cell phones in classroom activities like my teacher did in this class.	12 (60)	8 (40)			



Appendix L

Andres' Email On New Appropriation Of Cell Phone Features

 @hotmail.com> 27. Sep. ☆  

an mich ▾

🇪🇸 Spanish ▾ > 🇨🇳 Chinesisch ▾ [Nachricht übersetzen](#) [Deaktivieren für: Spanisch](#) ×

Hola  El Ingles  esta super cada día apendiendo mas y mas y en cuanto al uso de celulares excelente, he descargado dos peliculas (Tracendence and 42) ingles-ingles ambas para desarrollar el oido. Tambien descargue un probrama el cual se llama "Fluent English" el cual sirve para descargar libros en Ingles, de igual manera otro llamado "English Conversation" el cual un caballero llamado "AJ" da enecima cantidad de consejos para el desarrollo de la conversacion en Ingles.

Gracias. Que la pases bien y abrazos. Visitanos por alla.



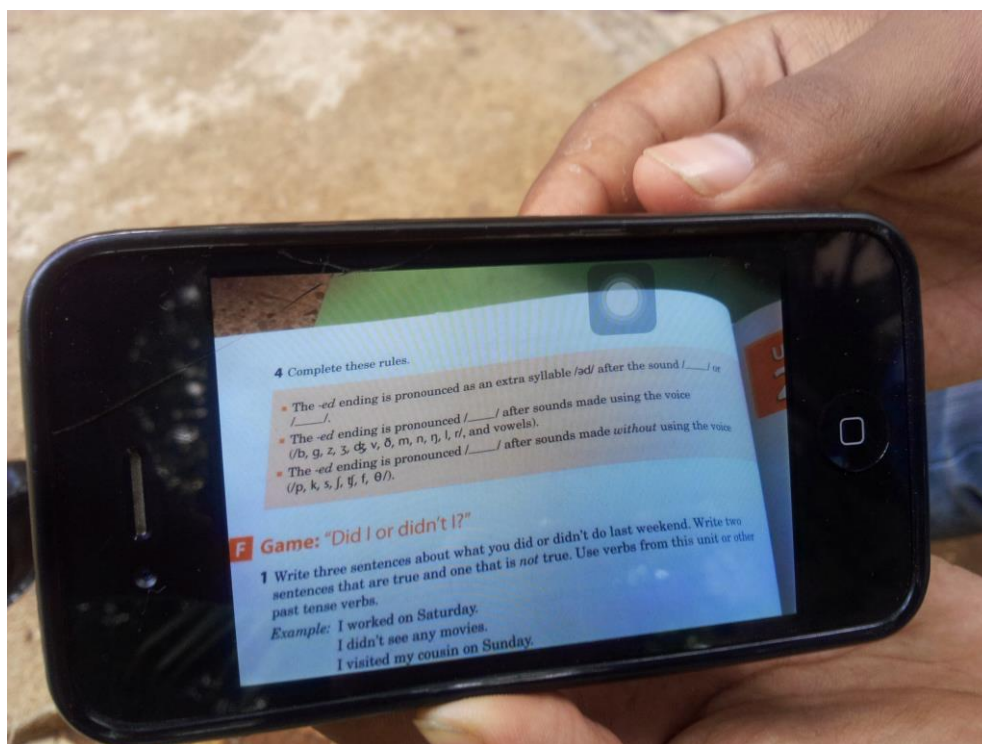
Translation:

Hi... English is going great every day, learning more and more and about the use of cell phones (it's going) excellent. I have downloaded two movies (Trascendence and 42) English-English, both to develop my listening. I also downloaded a program called "Fluent English" which is used to download books in English. Also, (I downloaded) another called "English Conversation" in which a guy called "AJ" gives a myriad of tips about conversation improvement in English.

Thank you. Have a nice day and hugs. Please visit us sometime.

Appendix M

Examples of Cell Phones as Data Gathering and Note-Taking Tools



CURRICULUM VITAE

GISELA MARTIZ

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EDUCATION

- Doctor of Philosophy**, Instructional Technology & Learning Sciences Summer 2015
Utah State University, Logan, UT
Dissertation: *A Qualitative Case Study on Cell Phone Appropriation for Language Learning Purposes in a Dominican Context.*
Committee Chair: Dr. Mimi Recker
- Masters of Science**, Instructional Technology 2010
Utah State University, Logan, UT
Masters Internship Experience: *Multidisciplinary specialists designing open educational resources with cultural affordances: Design, development and localization of virtual manipulatives for 7th grade students. Spring-Summer 2010. Utah State University, Logan UT (US) & Universidade Federal do Ceara, Fortaleza, Ceara (Brazil).*
Advisor: Dr. Nick Eastmond
- Associate Degree** Education, English Major 2003
Universidad Autónoma de Santo Domingo, Santo Domingo, Dominican Republic
- Bachelor of Arts**, Modern Languages, English Major 2001
Universidad Autónoma de Santo Domingo, Santo Domingo, Dominican Republic

TEACHING EXPERIENCE

- Graduate Teaching Assistant** Aug 2010– Dec 2014
Department of Instructional Technology and Learning Sciences, Utah State University, Logan, UT.
- Learning Theories (Online)** Fall 2013, Fall 2014
Co-taught and explained topics related but not limited to the main learning paradigms: behaviorist, cognitivist, and socio-cultural.
Facilitated and monitored online students' participation in the weekly discussions. Graded and provided constructive feedback on individual and group assignments.
- Projects in Instructional Technology (Face-to-Face & Online)** Fall 2012
Developed and organized course content in Canvas Learning Management System (LMS).
Co-taught content related to the principles and processes of 'Instructional Systems Design' (ISD) and 'Understanding by Design'.
Facilitated on campus lectures through Adobe Connect to online students.

Monitored, graded and provided constructive feedback on individual and group assignments.	
Design and Development Studio (<i>Blended</i>)	Spring 2012
Organized course content inside Canvas Learning Management System, and external online resources (Wikispaces, Google Docs, Wimba Conference Tool). Explained assignment requirements and answered students' questions related to the 'First Principles of Instruction' model. Monitored and provided constructive feedback on group and individual assignments.	
Research and Evaluation in Instructional Technology (<i>Face-to-Face & Online</i>)	Spring 2011
Organized course content in Blackboard LMS for students' access. Video-recorded lectures to be uploaded to Blackboard LMS for online students' access. Monitored students' participation through weekly threaded discussions posted on Blackboard. Explained and provided constructive feedback on group projects for the different stages in educational research and evaluation. Monitored and graded online and on campus students' assignments.	
Foundations in Instructional Technology <i>Face-to-Face</i> <i>Online</i>	Fall 2010, Fall 2013 Fall 2011
Facilitated weekly discussions, and monitored student engagement and progress in the course. Explained and provided clarification on topics related to the history of Instructional Technology and Learning Sciences, important figures in the fields, and current and future trends. Provided constructive feedback on the proper use of academic writing, including APA style. Graded individual and group assignments.	
English as Foreign Language Teacher <i>New Horizons Bilingual School, Santo Domingo, Dominican Republic</i>	2005-2008
Taught English as Foreign language to children, adolescents and adults at basic, intermediate and advanced levels. Integrated technology resources to maximize a meaningful learning among students. Encouraged collaborative and situated learning among students through the integration of real-world experiences in class activities.	
English & French Teacher <i>Colegio del Apostolado, Santo Domingo, Dominican Republic</i>	2007-2008
Elementary French Teacher 5th & 6th grades	
Implemented a student-centered approach where students were encouraged to learn not only the French language, but also about the culture through songs, visual representations (drawings, pictures, movies), and realia.	
Intermediate French Teacher 7th grade	
Developed student French language skills by integrating real-world experiences	

into the classroom content. Encouraged collaborative learning through research assignments where students explored different French-speaking countries and their culture.

Advanced English Teacher 5th grade

Developed English language skills through collaborative and informal learning by integrating students' own interests into classroom activities (e.g., American pop culture and music).

Elementary School Teacher <i>Look At Me Bilingual School, Santo Domingo, Dominican Republic</i>	2005-2007
Homeroom Teacher 2nd grade Taught Science and Math according to American Curriculum Standards for 2 nd grade, adapting them to students' context in the Dominican Republic	2006-2007
Homeroom Teacher 3rd grade Taught Language Arts and Social Studies according to American Curriculum Standards for 3rd grade, adapting them to students' context in the Dominican Republic	2005-2006
Elementary School Teacher <i>Villas del Mar International School, Juan Dolio, Dominican Republic</i>	2004-2005
Homeroom Teacher 3rd Grade Taught the core curriculum -Language Arts, Social Studies, Math and Science- from a Christian perspective, using A Beka Book academic program.	

PROFESSIONAL PRESENTATIONS

- Martiz G. (April, 2015). Cell Phones as Language Learning Tools in a Dominican Context. *Concurrent session at AERA Annual Meeting*. Chicago, IL.
- Martiz G. (February, 2015). Teacher Appropriation of Cell Phones for Language Learning Activities in a Dominican Classroom: A Case Study. *7th Annual Ethnographic and Qualitative Research Conference*. Las Vegas, NV.
- Martiz, G. (April, 2014). Cell Phones as Language Learning Tools among Dominican Students: An Exploratory Case Study. *Poster session at the Graduate Research Symposium 2014*. Utah State University, Logan, UT. (Best Poster Award)
- Martiz, G. (October, 2013). Perceptions of English language Dominican Students on Cell Phone Use for Language Learning Activities. *Concurrent session at AECT International Convention*. Anaheim, CA.
- Martiz, G. (April, 2013). Dominican English Language Teacher Perceptions on Factors Influencing Mobile Devices as Educational Tools. *Concurrent session at AERA Annual Meeting*. San Francisco, CA.
- Martiz, G. (June, 2012). Los dispositivos móviles como herramientas educativas en la enseñanza del inglés. *VIII Congreso Internacional Interdisciplinario de Investigación Científica*, Santo Domingo, Dom. Rep.
- Martiz, G. (November, 2011). Affordable mobile learning: Learning English language vocabulary through text messages. *Panel presentation at the AECT International Conference*, Jacksonville, FL.
- Martiz, G. (June, 2011). Cell phones for English language teaching. *Concurrent Session at the Annual Conference for teachers of English: New waves, new ways in ELT*. Santo Domingo, Dom. Rep.

Martiz, G. (April, 2011). Localizing Mobile learning: Conventional cell phones for English as foreign language learning. *1st International Symposium on Open Educational Resources: Issues for Globalization and Localization*. Utah State University Logan, UT.

Martiz, G., Teemant, B., Coulson, S., Reece, S., Santoso, H. (April, 2011). Evaluating Service Learning at Utah State University: Perceived benefits to Faculty, students and the community. *Poster session at the Intermountain Graduate Research Symposium*. Utah State University, Logan, UT.

Maloney, J.M., Martiz, G., Oliveira, L., Luiz, A., Tanner, B., Gurko, K., Chaves, P. Gutierrez, R., West, R. (April, 2010). Multidisciplinary Specialists Developing Open Educational Resources with Cultural Affordances. *Poster session at the Intermountain Graduate Research Symposium*. Utah State University, Logan, UT.

Eastmond, J. N., Martiz, G., Gutierrez, R., & Shanley, K (October, 2009). Conducting a Cultural Audit: A Case Study in Service Learning for the Dominican Republic. *Concurrent session at the AECT International Conference*. Louisville, KY.

PUBLICATIONS

Eastmond, J. N., Martiz, G., Gutierrez, R., & Shanley, K. (2010). Conducting a cultural audit: A case study in service learning for the Dominican Republic. *TechTrends*, 54(2), 16-18.

CONFERENCE PROCEEDINGS

Martiz, G. (2011). Affordable Mobile Learning: Conventional cell phones for English as a foreign language teaching. In Amiel, T., & West, R.(Eds.) *Proceedings of the 1st International Symposium on Open Educational Resources: Issues for Localization and Globalization* (pp. 59-85). Logan, Utah: Utah State University

LANGUAGES

Spanish- Native
Portuguese- Professional Proficiency
French-Intermediate Proficiency
German- Basic Proficiency

VOLUNTEER & LEADERSHIP EXPERIENCE

Vice-President Instructional Technology Student Association (ITSA) Fall 2012- Spring 2013
Communications Officer ITSA Fall 2010- Spring 2012
Utah State University, Logan, UT

Volunteer (Equipment setup) November, 2011
AECT International Conference, Jacksonville, FL

Volunteer (Imovie workshop) & Facilitator October, 2009
AECT International Conference, Louisville, KY

Attaché representing Antigua & Barbuda 2003
Volunteer at different sporting events (interpreter, attaché, tourist guide) 2000-2003
2003 Panamerican Games, Santo Domingo Dom. Rep.

PROFESSIONAL AFFILIATIONS

Association of Educational Communications and Technologies (AECT)
 American Educational Research Association (AERA)
 Golden Key International Honor Society

PROFESSIONAL CONTRIBUTIONS

Paper Reviewer

October, 2012: 2nd International Symposium on OER: Issues for globalization and localization
 (1st Workshop Recursos Educacionais Abertos: Questões para globalização e localização).
 Rio de Janeiro, Brazil.

Workshops

June 2, 2011: Mobile learning and online language learning communities for foreign language
 teaching. Participants: 15 English and French High school teachers. Centro de Excelencia
 Colombia, Santo Domingo. Dom. Rep.

Invited Talks

July, 2012: What can you do with a PhD? Being a Doctoral student in a foreign university.
 Master of Applied Linguistics in Second Language Teaching. Universidad Autónoma de
 Santo Domingo. Santo Domingo. Dom. Rep.

June, 2011: Importance of good research strategies in English language education. Master of
 Applied Linguistics in Second Language Teaching. Universidad Autónoma de Santo
 Domingo. Santo Domingo. Dom. Rep.

June, 2009: Instructional Technology applications in English language teaching. Centro De
 Excelencia Prof. Cristina Billini Morales, Fe Y Alegría. Santo Domingo Norte. Dom. Rep.

AWARDS & HONORS

Best Poster Award <i>Graduate Research Symposium 2014, Utah State University</i>	2014
Graduate Teaching Assistant of the Year 2012-2013 <i>Emma Eccles Jones College of Education and Human Services, Utah State University</i>	2013
Graduate Teacher of the Year College of Education <i>Graduate Research Awards 2013, Utah State University</i>	2013
Graduate Student Senate Enhancement Award 2013 <i>Graduate Student Senate, Utah State University</i>	2013
International Division R.W. Buddy Berniske Award <i>AECT 2010 Annual Convention Awards, Anaheim, CA</i>	2010