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**SECOND LANGUAGE  
ACQUISITION AND MOBILE-  
ASSISTED LANGUAGE  
LEARNING: Educators’  
perspectives on identity and  
practice.**

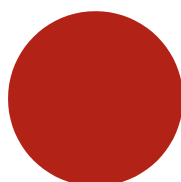
Tomaz Aurélio Florêncio Silva

**M**

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FACULDADES PARTICIPANTES:

FACULDADE DE ENGENHARIA  
FACULDADE DE BELAS ARTES  
FACULDADE DE CIÊNCIAS  
FACULDADE DE ECONOMIA  
FACULDADE DE LETRAS



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Orientador: Carla Susana Lopes Morais (Professora Auxiliar)

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Aprovado em provas públicas pelo Júri:

Presidente: João Carlos de Matos Paiva (Professor Associado)

Vogal Externo: Teresa Margarida Loureiro Cardoso (Professora Auxiliar)

Orientador: Carla Susana Lopes Morais (Professora Auxiliar)

Coorientador: Luciano José Santos Reis Moreira (Assistente Convidado)



# Resumo

Pelos últimos 25 anos, mobile-assisted language learning é tema de estudos não só pelas suas capacidades de aprendizado e ensino de idiomas a distância e online, bem como também como ferramenta para atividades em salas de aula físicas. Educadores de aquisição de segunda língua se diferenciam em estilo e abordagem à educação de línguas, fazendo uso de diferentes ferramentas para proporcionar vários cenários e possibilidades de aprendizado para seus alunos. Em função de entender as perspectivas em torno do alinhamento entre estes profissionais e as affordances dos dispositivos móveis, esta investigação dá ênfase para questões de identidade profissional, práticas dos educadores e suas percepções no que diz respeito aos seus conhecimentos e proficiência em dispositivos móveis para fim educativos. Doze educadores de aquisição de segunda língua do Brasil foram entrevistados e os dados produzidos por estas entrevistas – juntamente com memorandos e notas de campo – foram analisadas usando NVivo, seguindo as guias providenciadas pela grounded theory. Os resultados mostram que, mesmo os educadores considerando a si mesmos como “abertos” à mudanças e reconhecendo a mais valia que os dispositivos móveis podem trazer para as aulas, esta abertura se torna restrita quando suas identidades profissionais estão em risco pelo uso obrigatório das tecnologias móveis quando não acompanhadas por suporte, treinamento ou diálogo em torno das práticas do uso das mesmas para aquisição de linguagem. A discussão foca no papel do diálogo entre educadores e instituições para implementação dos dispositivos de forma significativa, no paradoxo entre a relevância reconhecida nos dispositivos móveis para a aquisição de linguagem e a falta de repertório para o uso de tais dispositivos e os rituais de uso dos dispositivos para promoção de atividades e inclusão dos estudantes. Como conclusão, esta tese produz uma hipótese preliminar de para uma nova categoria de m-learning denominada MALA (Mobile-Assisted Language Acquisition) baseada na percepção e dos educadores de aquisição de segunda língua frente ao uso dos dispositivos caracterizados em m-learning.

# Abstract

For the past 25 years, mobile-assisted language learning affordabilities have been studied not only for its distance and online language learning capabilities but as a tool for activities in physical classrooms as well. Second language acquisition educators differ in style and approach to language education, making use of different tools to provide acquisition scenarios and possibilities for their students. To understand the perspectives around the alignment of these professionals and mobile devices affordabilities, this research emphasizes on issues of professional identity, educators' practices, and their understanding of their awareness of mobile capabilities. Twelve second language acquisition educators from Brazil were interviewed, and the data produced from those interviews – along with memos and field notes - were analyzed using NVivo software following the guidelines provided by the grounded theory. Results show that although second language acquisition educators view themselves as "open" to changes and recognized the ad-value that mobile devices could have for classes, this openness becomes restrict when their professional identities are at risk by the mandatory use of mobile technologies without support, training or dialog around the practices of its use for language acquisition. The discussion focuses on the role of dialogs between educators and institutions for implementing mobile devices in educators' practices in meaningful ways, the paradox between the relevancy recognized in mobile devices for language acquisition and lack of repertoire for the use of such devices by educators, and the rituals of mobile use for activities and students' inclusion. The conclusion of this thesis produces a preliminary hypothesis for a new category in m-learning called MALA (Mobile-Assisted Language Acquisition) based on the perception of second language acquisition educators towards the use of devices characterized by m-learning.





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Tomaz Silva



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## Abbreviations and Symbols

CALL	Computer-Assisted Language Learning
MALL	Mobile-Assisted Language Learning
SLA	Second Language Acquisition
ICT	Information and Communication Technology
ULE	Ubiquitous Learning Environment
CP	Content Producer
CC	Content Consumer
SP	Service Provider
TELL	Technology-Enhanced Language Learning
TALL	Technology-Assisted Language Learning
IPT	Identity Process Theory
ZPD	Zone of Proximal Development
SIT	Social Identity Theory



# Introduction

For quite some time now, mobile technologies have been part of the lives of a significant portion of the global population. With qualities such as portability, personalization, and connectivity, mobile devices can play different roles at different times, and the possibility of learning and teaching through those devices have not passed unnoticed.

From the number of possibilities and affordabilities that mobile devices brought to users, there is a particular importance into using it and relating mobile devices to language learning and language teaching, mainly because having a second language can play a significant role in if a person wishes to have access to more knowledge, information or to communicate and contribute to the globalized society.

While the studies on mobile learning tend to focus on student efficacy, applications, and affordabilities, there is a gap in the literature regarding the perception of the use of such devices by language acquisition teachers and educators. The understanding of this perception becomes relevant if one wants to comprehend how those mobile devices can be better integrated into classes or teachers' practices and, therefore, to education as a whole.

The goal of this research is to – through a series of interviews – gather knowledge on how concepts such as “mobile-assisted language learning” (MALL), “second language acquisition” (SLA) and “teacher identity” can help researchers understand what the perceptions of educators towards mobile devices in the context of education are. Moreover, it is expected to realize if and how SLA educators are using mobile devices in their classes, and how the insertion of such technology can impact the notion of professional identity and their practices.

To guide this research three questions were created: 1) What are SLA educators' perceptions towards mobile devices and its use for language acquisition? 2) How the integration of mobile

devices in SLA practice might influence educators' perception of professional identity? 3) When confronted with a change (e.g., mandatory integration of mobile devices in classes), how SLA educators view themselves coping with transformations in their practices?

Twelve educators from São Paulo, Brazil, were interviewed via videoconference and answered open-ended questions regarding their perception on their own identity, practices, mobile devices for second language education, and authoritarian's educational policies. Participants were also questioned about their perception towards about use of mobile devices for SLA by their peers. The data gathered through the interviews – as well as field notes, audio and textual data - was made by using grounded theory as the qualitative research method and analyzed using NVivo software.

The discussion around the results focus on three aspects: the common ground between relevancy for SLA and the level knowledge about mobile affordabilities that participants perceive they have; the paradox between mobile devices affordabilities versus the actual use without the awareness of such affordabilities; and the rituals that could be help students and educators resignifying mobile devices.

The conclusion is that even considering themselves not proficient in mobile affordabilities and capabilities, educators perceive mobile devices as a pedagogical resource with great potential for SLA when used with relevancy and context. The professional identity of participants seems not to be in danger by incorporating new practices concerning mobile devices, for they assume that it is part of their identities to be open to changes when it comes enriching their classes. As for their perception toward their identity and practice being shaped by mandatory actions, they see it as contra productive to their practices and potentially damaging their classes and, therefore, the quality of language input they provide, however, they welcome policies that encourages changes through dialog, information and training.

In the end a preliminary hypothesis is made proposing a new category for m-learning named mobile-assisted language acquisition (MALA) that comprehends the studies of MALL aligned with the theories of SLA.

## Introduction

### Motivation

With mobile devices becoming pervasive, educators started to realize the potential in adopting the device for its functionalities and convenience. Not only they could access relevant content for a subject, plan classes, and share material, but could also use their devices as pedagogical instruments as well.

I worked as an educator for almost 7 years, teaching English to children from 2 to 14 years old, and through most of my career as an educator I worked for a language school that provided me with training, support and also exposed me to second language theory in an environment in which I could put to practice such theory. I had several pedagogical resources at my disposal at the time, but there was one tool that I was constantly using that was not part of my training and had little to none dialog surrounding it: my mobile phone.

I knew why I wanted to use my mobile phone in certain moments in classes that I was teaching, and I had a guess about why my students wanted to use theirs, but I never knew if how I was using it was “the right way”. Moreover, I had a feeling that I was missing out on many possibilities of using my mobile phone for SLA. There was never a dialog about the subject, let alone formal training. Still, my level of autonomy and interest made me look for some ways in which the use could be fun but more important, relevant and meaningful for my students’ language development.

After some years I decided to hit the pause button on my career as an educator and went back to studying. I started this master in multimedia, became familiar with several models of online learning and educational technologies, but I never stopped to wonder if other educators had the same anguishes as I had when I was teaching.

Much to my surprise, when it came to find out how and why educators are using such mobile devices, literature ended up being scarce depending on the field of education. As I focused my search on second language acquisition and mobile devices it got narrower, and as I progressed to search for researches that dealt with how educators are dealing with mobile devices for second language acquisition then it becomes almost non-existent.

My background as a second language acquisition educator and my curiosity about the practices of my peers led me to pursue this project but it is the lack of literature about mobile

devices for second language acquisition and the ramifications in educators' practices and identity that makes me want to contribute to the scientific community.

## **Research Goals**

Mobile technologies are part of students and educators as well, but its use for SLA has yet to be explored, even if such devices are being used for this very purpose. As a consequence, this study aims to enrich the knowledge to the field of educational sciences by having as goals:

1. To gather a more in-depth understanding of how SLA educators perceive mobile devices in their educational settings.
2. To understand how SLA educators view mobile devices aligned with SLA theory.
3. To gather more knowledge on possible factors that might influence mobile integration in classes.
4. To understand if the integration of mobile devices in class for educational purposes might influence educators' perception of professional identity.

## **Research Questions**

After looking at the literature on the subject proposed by this study and analyzing the state of the art in which mobile learning and SLA is, three questions arose:

1. What are SLA educators' perceptions towards mobile devices and its use for language acquisition?
2. How the integration of mobile devices in SLA practice might influence educators' perception of professional identity?

## **Introduction**

3. When confronted with a change (e.g., mandatory integration of mobile devices in class), how SLA educators view themselves coping with transformations in their practices?

## **Relevance for the field**

This study shows relevance for the educational sciences field since there are not enough studies that comprehend the matters of m-learning, second language acquisition, and identity altogether. This study can help not only to understand how educators perceive mobile devices in classrooms for educational purposes but also their perspectives about policies and initiatives that schools, and institutions might consider when pondering about what practices adopt for mobile use for language learning and teaching.

Moreover, this study can provide useful insights for applications and software developers that wish to understand how their tools are being used by looking at how the user (educators) perceive mobile technologies and mobile capabilities for second language acquisition.

## **Methods**

The grounded theory (Glaser and Strauss, 1967) qualitative research method was chosen for this study for being considered as the most suited to deal with the data gathered through a series of interviews, field notes, and textual data. Twelve participants – all Brazilians and second language acquisition educators - took part in interviews made via videoconference in which they answered around 30 open-ended questions related to the subject of this study as well as their views, perceptions, and perspectives on their identities and the educational scenario in which they act.

The analysis was made using the software NVivo, and the results obtained were vital to the discussion that is presented in this study.

## **Dissertation Structure**

This document is comprised of six chapters, including this introductory chapter that summarizes the overall goal of this study, as well as the motivation, relevance to the field of educational sciences. Chapter 1, Literature Review talk about the three pillars in which this study is supported: m-learning, second language acquisition theory, and identity. Chapter 2, Methods, focus on the choice for the grounded theory qualitative research method as the one used for the gather, sort, and analysis of all the data collected throughout the research. In this chapter, the theoretical sampling is categorized as well as the choice of participants and their relevance for the study. In Chapter 3, Results, presents the results found in the analysis of the data gathered mentioned in Chapter 2. Chapter 4, Discussion, is a debate about the results and its aim is to give meaning to the results as well as to contextualize the findings moving towards a proposition for a new model of m-learning. In Chapter 5, Conclusions, I will present my conclusions, limitations, future works and how can the educational and scientific communities can use this study to its advantage.



# 1. Literature Review

In order to gather a deeper understanding on the topic of study and to better interpret and analyze the interviews that were made, the literature review focus on three main aspects for this research study: digital learning environments, second language acquisition, and teacher identity. Those three aspects are then divided into five subsections: Digital Learning Environments; Computer-Assisted Language Learning; Mobile-Assisted Language Learning; Second Language Acquisition; and Teacher Identity.

## 1.1 Introduction

Mobile devices and mobile technology are a part of people's daily lives. Being for personal use, reading a friend's message, watching videos, listening to music, sharing photos and thoughts; professionally, participating in a videoconference, writing and reading e-mails on the go, checking schedules for meetings and events; and academic – researching for subjects, papers or data – we are more and more used to mobile devices being part of people's routines.

In “Digital Learning Environments” an overall look at the digital learning landscape is made starting with distance learning and online learning, moving to e-learning, then finally focusing on mobile learning and later relating to the concept of ubiquitous learning. “Computer-Assisted Language Learning” or CALL, looks at how computer technology has been used for language learning, its concepts, and aspects. “Mobile-Assisted Language Learning” or MALL, follows the studies first started by CALL but focusing on mobile technologies and initiatives and associates it to language learning, sometimes relating these technologies to methodologies such as the one

provided by Second Language Acquisition theory. The next section focusses on “Second Language Acquisition” appropriates from what is discovered in the previous section and tries to differ the terms “learning” and “acquisition” in order to understand how those terms – and their approaches – should be dealt from a language education perspective. Finally, in the last section, “Teacher Identity,” the literature focus on first understanding concepts such as personal identity and social identity to later focus on professional identity and the concept of teacher identity.

The potential for learning and teaching using such devices has not passed without being observed, and many initiatives started to study and research the actual (and maybe transformational) impact that such devices could have in what became known as Mobile Learning, or m-learning.

M-learning paved the way to other studies and took a particular interest in language learning and language teaching, especially in cases where mobile devices and their characteristics showed advantages against computer learning or e-learning in what is known as Mobile-Assisted Language Learning.

## **1.2 Digital Learning Environments**

From the advantages of studying in the comfort of our homes to having devices that allow us to have education information access, digital technologies are a big part of education nowadays.

In this section, the literature review focus on exploring some of the digital learning environments as well as its concepts and components. It starts by exploring Distance Learning and Online Learning, followed by e-learning, the concept of ubiquitous learning, and finally, it focuses on Mobile Learning and how mobile devices are being used and appropriated by students and educators.

## **1. Literature Review**

### **1.2.1 Distance Learning and Online Learning**

Distance learning and distance education are often described as the effort of providing access to learning for those who are geographically distant or inaccessible (Moore, Dickson-Deane, & Galyen, 2011). Keegan (1996) suggests that distance education is an “umbrella” term that incorporates aspects such as correspondence education or correspondence study that were identified as a potential offspring of distance education. Conrad (2006) says that the term evolved giving birth to new terms such as e-learning, online learning, web-based learning, or virtual learning.

Online learning is described as a more recent version of distance learning, which improves access to educational opportunities for learners considered as nontraditional and disenfranchised (Conrad, 2002). Online learning is also often described among authors as access to learning experiences via the use of some technology (Conrad, 2002) and directly connected to technology mediums and context (Lowenthal, Wilson, & Parrish, 2009).

There’s a relation between distance learning and online learning being that there is a continuity among them, to which the aspects as connectivity, flexibility, and accessibility stands out when it comes to promoting various interactions (Moore, Dickson-Deane, & Galyen, 2011) but Benson (2002) makes clear that online learning is only a newer version distance learning.

### **1.2.2 e-learning**

Although it cannot be said with certainty, the term e-Learning was most likely originated during the 1980s, alongside another delivery mode online learning. (Moore, Dickson-Deane, & Galyen, 2011).

E-learning can be defined as a form of training that uses a digital device as a medium, designed to support individual or group learning as well as organizational performance goals that can be used in asynchronous (self-paced individual study) or synchronous (instructor-led) forms (Clark & Mayer, 2016)

Clark & Mayer (2016) describe e-learning as having features such as:

- Use of CD-ROM, local internal or external memory, or servers on the Internet or intranet to transmit and/or store lessons;
- Use of various media elements such as pictures, videos, and words to deliver content;
- Instructional methods such as exercises, examples and feedback to promote learning, sharing and communication;
- Helps learners build new knowledge and skills linked to individual learning goals or to improved organizational performance.
- Can be used in a synchronous or asynchronous form.

The Higher Education Funding Council for England (HEFCE), in its 2005 Strategy for E-Learning says that the scope of strategies should focus on opportunities provided by technologies and reinforce that the implications of e-learning should focus on strategies and policies rather than systems and tools. E-learning is, therefore, something that happens when students learn with by using information and communications technology (ICT) and that is not something you ‘deliver’, but something you enable your students to do (HEFCE, 2005).

For the use and applications of e-learning, Brenton (2008) offers some possibilities and scenarios in which, although it varies in difficulty and level of technical skills, might be useful for improving student learning. Even though the use of e-learning can be beneficial in some cases, “e-learning tools and fashions date quickly” (Brenton, 2008, p.97) and should be applied with care and appropriately.

Although there are still discussions among researchers to what is the definition of e-learning and what exactly are the characteristics of the term, “is clear is that all forms of e-Learning, whether they be as applications, programs, objects, or websites, can eventually provide a learning opportunity for individuals” (Moore, Dickson-Deane, & Galyen, 2011, p.130).

## 1. Literature Review

### 1.2.3 ubiquitous learning (u-learning)

“Ubiquitous computing” is a term used by Mark Weiser (1991) to refer to the integration of computers in the physical world harmoniously as devices such as personal computers, mobile phones, digital cameras, and other devices become more pervasive and omnipresent, but it also relates to computer technology as being so integrated that it fades and recedes into the background of our lives. Ubiquitous computing in this context does not just mean computers that can be easily carried but instead are integrated into every scope of our lives.

Ubiquitous learning or u-learning follows the characteristics of ubiquitous computing of seamless integration in our lives and puts it in an educational context where learning becomes as pervasive as the devices that are being used to transmit its content.

Zhang, Jin & Lin (2005) attributes five characteristics to the concept of ubiquitous learning:

- learning contents are omnipresent;
- learning interface should be through gesture, speech, context, and effect;
- computers should not be in the way of the learning process, and learners don't have to be aware of the learning environment;
- Learners should communicate with other learners in forms that they feel comfortable with.
- Seamless communication supports so learners can, as technology progresses and becomes more pervasive, forget that they are using a computer or device.

Based on this characteristics, Zhang, Jin & Lin (2005) continues to propose a model for u-learning that consists on what they call “learning support center side” (content delivery and management; learning support; social support and community) and “individual learner side” (PDAs, Mobile, and other devices). This model is shown in Figure 1. The individual learner side relates to the ‘tool’ (mobile phones, tablets, computers, etc.) that are being used as well as the social component, while the learning support center relates to the information that is being provided and how is being provided. The learner support center is formed by three modules:

- Computer Support Module: divided into “content of the learning system” and “learning management system”.

- Learning Support Module: individual and customized learning support.
- Social Module: principles and skills for social learning communication.

Sung (2009) states:

Ubiquitous learning is characterized by providing intuitive ways for identifying right collaborators, right contents and right services in the right place at the right time based on students surrounding context such as where and when the students are (time and space), what the learning resources and services available for the students, and who are the learning. (p.77)

According to Jones & Jo (2004) a ubiquitous learning environment (ULE) is “any setting in which students can become totally immersed in the learning process” (p.469) meaning that, since education is pervasive, and it happens at all times, students, when inserted in an ideal ULE, might not even be aware of their learning process.

# 1. Literature Review

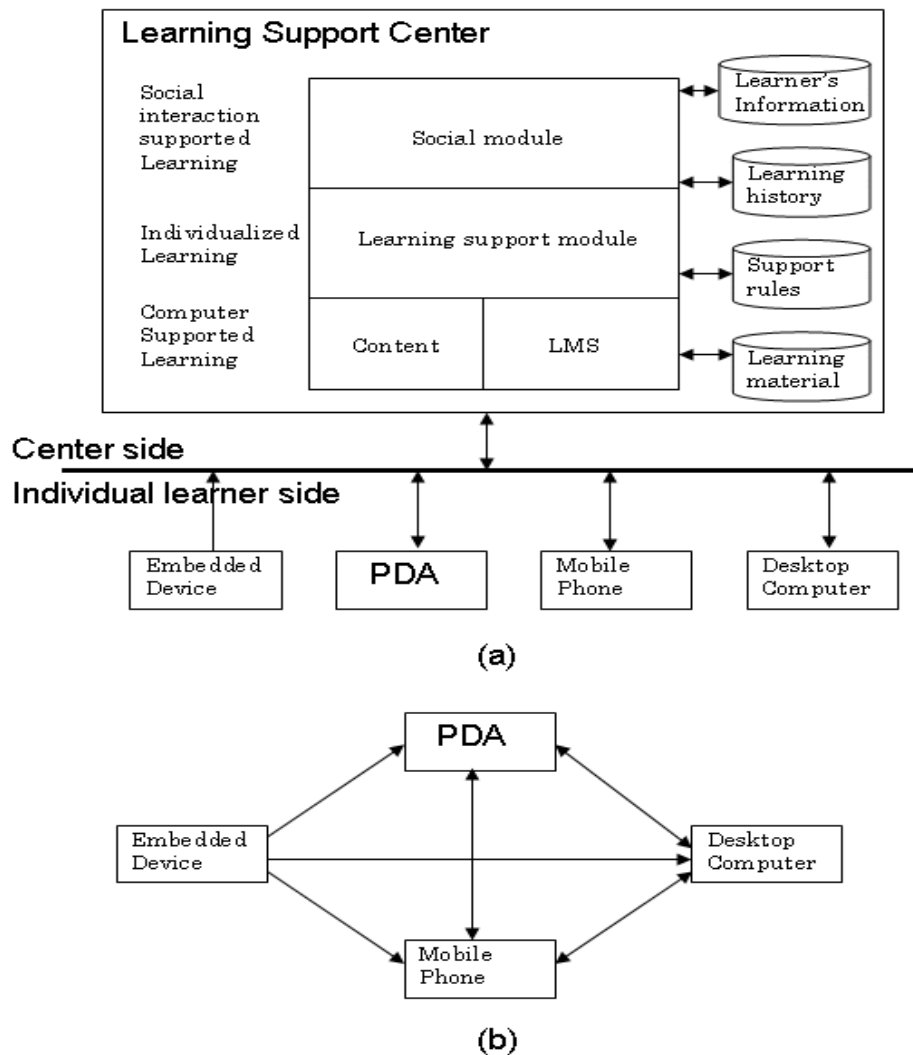


Figure 1. Illustration of the ubiquitous learning. (Zhang, Jin & Lin, 2005, p. 2)

The ULE system is an environment supporting student learning using digital media in a geographically distributed environment. This system is defined with the following elements: Content Producer System, Service Provider System, and Content Consumer System. (Sung 2009)

The Content Producer (CP) provides resources in an interactive and informative way, presented in forms such as graphics, text, image, video, and audio. It can have functions such as editing previous content, modifying the database, or retrieving data and information. In practice, it can be used in, for example, the preparation of a test by a teacher using various tools (text-based, image-based, table-based, etc.), that will later, through CP, be connected links that provide further materials, links, and references.

The Service Provider (SP) consists of modes that can be synchronous learning, asynchronous learning, and hybrid learning. It is not restrained to traditional educational systems and can support effective communication between student and teacher.

Content Consumer (CC) is responsible for distributing data and information throughout the devices distributed in the ULE. “CC offers students the opportunity to increase the effect of their implements using the latest in multimedia technology, equipment, and testing” (Sung, 2009, p. 80).

Sung (2009) summarizes ubiquitous learning by stating that “at its core, the term conveys a vision of learning which is connected across all the stages on which we play out our lives” (p.78). The ubiquitous computing environment enables learners to learn at any place and at any time but still struggles with how to provide learners with the right information, in the right way, at the right time.

#### **1.2.4 mobile learning (m-learning)**

Mobile devices are a part of our lives. We can use it to communicate and interact with other people, to entertain ourselves, and to learn. The term mobile is associated with the possibility of doing activities and accessing its content across different times and in different locations using devices such as smartphones or tablets (Kurkela, 2011) and with this ‘mobility’ comes an opportunity to engage in different learning environments, whenever is most suitable.

Klopfer, Squire & Jenkins (2002) gave mobile devices 5 main properties:

- Portability - can easily carry the device;
- Social Interactivity - communicate and share;
- Context Sensitivity - gather data such as location and time and use to its advantage;
- Connectivity - ability to “talk” with other devices;
- Individuality - customization and personalization of the device.

Klopfer, Squire & Jenkins (2002) provided a concept in which the properties of mobile describe a personalized device which is easily carried, allows synchronous and asynchronous communication and capable of storing and sharing data.



## 1. Literature Review

There are different definitions of mobile learning in the literature (Crompton, 2013). According to Quinn (2000), mobile learning is e-learning which is performed through mobile devices while Park (2011) describes as “the use of mobile wireless devices for the purpose of learning while on the move” (p. 79). The definition of mobile learning varies and changes over time since new emerging technologies can sometimes bring new characteristics that the previous technology did not have.

McQuiggan, Kosturko, McQuiggan & Sabourin (2015) defined mobile learning as instant and optionally accessible, anywhere and anytime learning, which helps us create our knowledge, satisfy our curiosity, collaborate with others and enrich our experiences.

Mobile learning definitions are constantly changing as new devices and technologies emerge (Demir & Akpınar, 2018). It is “the intersection of mobile computing and e-learning: accessible resources wherever you are, strong search capabilities, rich interaction, powerful support for effective learning, and performance-based assessment” (Quinn, 2000, para. 8) and “definitions of m-learning in the past decade appear to have been constructed around four central constructs – learning pedagogies, technological devices, context, and social interactions” (Compton, 2013, p.48).

Although there are many theories around m-learning, Crompton (2013) points out two theories that can help form a more defined framework for m-learning: The Activity Theory and The Conversation Theory.

The Activity Theory is a theoretical framework for analyzing learners’ practices while considering other influences such as social and individual. This theory relates to Vygotsky’s (1978) Zone of Proximal Development, and the learner-object (in this case, mobile devices) mediated relationship. The activity theory deals with describing how m-learning is mediated by social interactions.

Conversation Theory (Pask, 1975) is based on the belief that knowledge is created through the exchange of knowledge through conversations. In the case of m-learning, conversation theory is applied in the context of the assumption that mobile devices can provide more opportunities and act as a system in which learners can create and share knowledge.

Although there is no final definition for m-learning, as the relation between computer technologies and users grew narrower so did the need to incorporate such advances into

classrooms in an attempt to give students new technological and digital literacy skills. (McQuiggan, Kosturko, McQuiggan & Sabourin, 2015).

Due to affordability and availability, the use of mobile devices, especially smartphone, has become common among a broad spectrum of age groups (Newhouse, Williams, & Pearson, 2006) and mobile technologies have the power to transform our daily lives in ways such as connectivity, communication and cooperation (McQuiggan, McQuiggan, Sabourin & Kosturko, 2015).

Mobile devices have the power to affect learning both in the social-cultural and cognitive aspects (Pachler, 2009) while also promoting interaction among students outside the classroom (Sharples, Arnedillo-Sánchez, Milrad, & Vavoula, 2009)

The fact that m-learning is, in many cases, a collaborative form of learning, the exchange of messages and the content the student can share their work, motivates and serves as a support and method of evaluation and self-evaluation. This connectivity aligned with portability is a property that is unique to mobile devices but according to Shin, Shin, Choo & Beom (2011) although smartphones are useful in m-learning applications “acceptance will depend on how well the user interface supports particular educational contexts” (p. 2207).

Sharples et al. (2009) called for the role of context as a central construct of m-learning, as a tool that is continuously being created by the surroundings and interaction of people. The context in m-learning is directly related to the notion that content comes in various formats and, therefore, must be used through meaningful and comprehensible context.

As important as mobile devices are in today’s modern society and the potential role it could have in learning, it cannot replace classroom dynamics but offers a support for learning outside classrooms and brings different interactions among students (Sharples, Taylor & Vavoula, 2010) but the lack of theoretical and pedagogical frameworks alongside a sustainable integration into formal educational contexts and the fact that there is still a lack of teacher support and training, contribute to limitations of the use of those devices (Baran, 2014). Many variables can make the device lose its potential, and teachers not being prepared to integrate it into their activities is an important one.

Mobile learning takes advantage of previous references of digital learning and, when combined with the concept of u-learning, has the potential of being something meaningful and transformative when it comes to teacher-student interaction. Still, Teacher support and teacher training are left aside in mobile learning research (Ekanayake & Wishart, 2014) even though

## **1. Literature Review**

teachers need to be informed of the value of mobile technologies and how to integrate them effectively into their classes (Schuck, Aubusson, Kearney, & Burden, 2013).

Mobile learning is not just the device; instead, mobile learning (m-learning) is the experience and opportunity afforded by the evolution provided aligned with the educational potential. m-learning relates to adapting and building upon technological advances and rethinking the responsibility of teachers and students, creators and users, and to blur the lines between formal and informal learning.

### **1.3 Computer-Assisted Language Learning (CALL)**

The first studies in Computer-Assisted Language Learning or CALL, as is more widely known, seems to have started in the 1960s, but it was in the during the 1980s that it became more popular thanks to the spread of personal computers and microcomputers. From then on, researches in this field became more prosperous, and changes in CALL definitions and sub-genres started to emerge.

CALL, as presented by Levy (1997), is described as "the search for and study of applications of the computer in language teaching and learning" (p.1). The focus is the use of specific learning designs, software, and applications, excluding ordinary "tools" found in a computer such as a web browser or word processor. Although Levy's definition is widely accepted, it is also rather narrow when compared to the advances in computer technology and the usability of the computer itself for the development of second language (L2) skills.

Since Levy's definition of CALL other definitions emerged, such as the one given by Beatty (2003) where CALL is described as "any process in which a learner uses a computer and, as a result, improves his or her language" (p.7).

Although Beatty (2003) uses the term "computer", Garret (2009) points out to the fact that the term now might refer to other types of technologies such as mobile phones, tablets, Mp3 players and other technological devices that might be used for the development of second language skills. CALL can take advantage of the many interactive and multimedia features that a computer is capable along with the support of internet resources (Davies et al., 2009). Mobile

devices and PDAs are gathering more importance as language learning delivering devices as it will be described further in the next subsection of this literature review.

CALL has been studied from fields such as of the applied linguistics, as well as ICT, psychology, instructional design, and artificial intelligence (Embogama, 2018). Different views of CALL make it for much richer research and approaches, but some acronyms other than CALL such as TELL (Technology-enhanced language learning), TALL (Technology-assisted language learning), NBLT (Network-Based Language Teaching) and MALL (Mobile Assisted Language Learning) have been used to describe the process of computer use and application for language learning purpose. Although all these acronyms deal with language learning acquired or enhanced through computer technologies, being through the focus on computer-mediated person-to-person interaction and communication (NBLT), as seeing the computer of a larger system (TELL), or by combining two acronyms – CALL and TELL – into one (TALL). There is also the term technology-mediated language learning, perhaps the most generic term of all, aiming to embrace all the acronyms above mentioned and others presented in Table 1. This term does not have an acronym.

The acronym MALL (Mobile Assisted Language Learning) that uses mobile devices (such as phones or tablets), applications and their capability for multimedia for L2 skill development will be further analyzed in the following section of the literature review since this acronym is one of the focus of this dissertation research.

A list featuring some other acronyms as well as the one presented above is described by Lamy & Hampel (2007) in Table 1.

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<b>CALI</b>	<b>Computer-Assisted Language Instruction</b>
<b>CALL</b>	<b>Computer-Assisted Language Learning</b>
<b>CELL</b>	<b>Computer-Enhanced Language Learning</b>
<b>CBLT</b>	<b>Computer-Based Language Teaching</b>
<b>CMC</b>	<b>Computer-Mediated Communication</b>
<b>ICALL</b>	<b>Intelligent CALL</b>
<b>MALL</b>	<b>Mobile technology-Assisted Language Learning</b>
<b>NBLT</b>	<b>Network-Based Language Learning</b>
<b>TELL</b>	<b>Technology-Enhanced Language Learning</b>
<b>WELL</b>	<b>Web-Enhanced Language Learning</b>

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Table 1. Acronyms in computer-assisted language learning (Lamy & Hampel, 2007, p.8)

While some terminologies and acronyms might be different, CALL is what is commonly used when referring to Language Learning via computer or digital technology.

Warschauer and Healey (1998) identified that CALL had three different approaches since it first started to be studied to which they refer as “Behavioristic”, “Communicative” and “Integrative” creating a framework for further analysis of CALL and the different scopes in which might be applied and analyzed. Behavioristic CALL – or Structured CALL as it was later referred (Warschauer, 2000) was implemented in the 1960s and 1970s and was based on drill and practice and having a formal structure focusing mainly on grammar-translation skills. Communicative CALL begins with the spread of the personal computer in the mid-1980s and it relates to the communicative exercises and meta-cognitive constructions. The third phase, Integrative CALL, puts the internet and multimedia affordabilities as the driven technology where learning is content-based and social interaction and socio-cognition play a role in developing skills.

In 2000, Warschauer reanalyzed the three approaches previously presented by Warschauer and Healey (1998) presented changes as demonstrated in Table 2.:

<i>Stage</i>	1970s-1980s: Structural CALL	1980s-1990s: Communicative CALL	21 <sup>st</sup> Century: Integrative CALL
<i>Technology</i>	Mainframe	PCs	Multimedia and Internet
<i>English-Teaching Paradigm</i>	Grammar-Translation & Audio-Lingual	Communicate [sic] Language Teaching	Content-Based, ESP/EAP
<i>View of Language</i>	Structural (a formal structural system)	Cognitive (a mentally-constructed system)	Socio-cognitive (developed in social interaction)
<i>Principal Use of Computers</i>	Drill and Practice	Communicative Exercises	Authentic Discourse
<i>Principal Objectives</i>	Accuracy	Fluency	Agency

Table 2. three stages of CALL (Warschauer, 2000)

Although Bax (2003), recognizes the value and use of Warschauer’s description of the stages of CALL, he sees inconsistencies in Warschauer (2000), claiming that it makes use of unclear criteria in some items. Bax then proposes a reevaluation of the nomenclature and divides CALL it into three distinctive categories: Restricted CALL, Open CALL, and Integrative CALL.

Restricted CALL is very similar to Behaviorist CALL, meaning the capabilities and dimensions concerning aspects such as learning theories, learner feedback, and software tools, but it differs in name since the word “restricted” is better suited for what the time period and usability conveyed and not being necessarily behaviorist. Although Restricted CALL relates to the period of the 1960s until mid-1980s, Bax (2003) states that it might still be observed.

Beginning around the mid-1980s, Open CALL gathers more awareness from the previous category and comprehends that a new approach is needed. However, Bax (2003) warns for the distinction between the Open aspect of technology and Open attitudes towards the adoption in important areas. “For this reason, we could argue that in general terms we are in an Open phase of CALL, but that each institution and classroom may also exhibit certain Restricted and even Integrated features” (Bax, 2003, p.23).

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Bax continues to explain that in order to understand what Integrative CALL is and how is integrated into an institution and teacher's practice, first we need to understand his concept of "normalization" (Bax, 2000), to which refers to "the stage when the technology becomes invisible, embedded in everyday practice and hence 'normalized'". Examples of this normalization can be found on everyday items, such as a pencil or a wristwatch that lost the status of 'technology' once it became mundane. Normalization is, thus, when something stops being recognized as a technology and becomes embedded in life, sometimes even taken for granted. Although, by the standard of normalization, we have not reached the stage of Integrative CALL - since the very acronym relates to the use of the computer, which has not been "normalized" and is still very much considered a technology – the path is towards computer technology becoming 'invisible. This idea of transforming CALL into something that is eventually "invisible", although supported by authors such as Egbert (2006), is contested and viewed as limited by others. Chapelle (2003), for example, contest the possibility of reflecting upon a technology if the same becomes invisible. Bax (2003) continues to state that for "CALL's successful integration into language learning will be that it ceases to exist as a separate concept and field for discussion. CALL practitioners should be aiming at their own extinction". (p.23)

Hubbard and Levy (2006) pointed out that CALL has evolved into something more than just technology and now spreads to other fields of education, "there is a benefit in having a focus which rests on the technology itself, especially with regard to teacher education" but continues to warn that "new technologies (both hardware and software) will be either blindly accepted or rejected without an informed and careful critical review or evaluation". (Hubbard and Levy, 2006, p.10)

When aligned with Krashen's (1981) and Krashen's and Terrell (1985) concept of Second Language Acquisition (SLA), CALL can then "focus not on language as input, but as a resource for participation in the kinds of activities, our everyday lives comprise. Participation in these activities is both the product and the process of learning." (Zeungler and Miller, 2006, p. 37-8), where language learning is inserted in a sociocultural context, while mediated by a computer or other technological device. Those that see that value of combining SLA and CALL should review the very acronym, giving more attention to the 'Language Learning' part rather than the 'Computer-Assisted' one (Knowles, 2004).

CALL has many advantages when used by those that understand the potential of computer technology for language learning, but it also has its drawbacks as well. Arguments such as that one should "have the technology knowledge before applying computer technology to practice

second language learning” (Derakhshan, Salehi & Rahimzadeh, 2015) and the level of digital and computer literacy necessary to use CALL effectively, are still relevant and invite for a better understanding of how educators are being trained to incorporate computer technology to language learning.

## **1.4 Mobile-Assisted Language Learning (MALL)**

"As soon as the mobile phones became a crucial part of our lives, there [*sic*] felt a need for using them in language learning tasks" (Miangah & Nezarat, 2012, p. 312). Mobile-Assisted Language Learning or MALL follow the path of changes new digital technologies provides and combines the aspects of the computer-assisted language learning studies (Warschauer and Healey, 1998; Levy 1997; Beatty 2003; Bax, 2003), applied together with the concepts of mobile learning (Quinn, 2000; Beatty 2003; Garret, 2009; Crompton, 2013). "MALL has developed over the past decade as a sophisticated field within its own right, with an increasing number of articles that examine various mobile devices used in environments both inside and outside of formal language learning situations." (Stockwell & Hubbard, 2013, p. 2).

The term mobile encompasses all kinds of technological devices that have mobility and accessibility as key features. It could be an MP3 player, mobile phone, smart phones, personal digital assistants (PDA) or tablets. Thus, MALL directly relates to the m-learning concept that "in essence, it refers to teaching and learning with the use of mobile technologies such as mobile phones, media players, PDAs, smartphones, and tablet computers, which are potentially available anytime and anywhere" (Duman, Orhon and Gedik, 2015) applied for language learning purposes. This possibility of learning in a synchronous or asynchronous way, without limitations on place or time, seems promising for students that are looking to obtain a second language and, therefore, have in their phones and tablets another means to fulfill it.

MALL has been defined as the use of "mobile technologies in language learning, especially in situations where device portability offers specific advantages" (Kukulka-Hulme, 2013, p. 3701). It is crucial to have a clear view of what the "specific advantages" Kukulka-Hulme refers to since this is what actually separates MALL from CALL.

As Stockwell & Hubbard (2013) pointed, many of the principles that apply to m-learning seem to apply to MALL as well, provided that there is time for exploration of mobile technologies.



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Stockwell & Hubbard (2013) recalls Elias (2011) "universal instructional design principles for mobile learning" and call attention to four principles that have clear value for MALL. The four principles applied to MALL are:

- equitable use, "deliver content in the simplest possible format;"
- flexible use, "package content in small chunks;"
- tolerance for error "scaffold and support situated learning methods;"
- instructional climate, "push regular reminders, quizzes, and questions to students"

(Elias, 2011, p. 147)

Although MALL doesn't have the same number of studies and research as CALL, it is gaining more attention due to the fact that it came as subgenre of m-learning, and the fact that m-learning is viewed as letting "the learners feel a greater sense of freedom of time and place" (Miangah and Nezarat, 2012). This 'freedom' proposes for learners – and educators as well – to re-interpret their mobile devices and the capability for language learning.

Smartphones and tablets play a particular role in m-learning and MALL, but one of the reasons mobile learning differs from e-learning and others previous digital language learning environments is the fact that learning is shifting from a personalized way of learning to a personal way of learning (Sharples, Taylor, & Vavoula, 2005). There is value in aligning the personal aspect of a mobile device, but not without bringing some concerns about its use, "there is a tendency in implementing mobile solutions, both broadly and locally, to sometimes uncritically focus on technology affordances" (Stockwell & Hubbard, 2013, p. 6). Among the issues features the aspects of "affordances for technology in language learning that are particularly relevant to mobile environments are access, authenticity, and situated learning (Reinders & White, 2010 cited in Stockwell & Hubbard, 2013, p. 6). Chinnery (2006) states that "as technologies continue to evolve, so does their propensity to shrink in size", what might be convenient on one hand, might present one of the limitations that scholars identified concerning screen size together with "the often-distracting environments in which they are used" (Reinders & Hubbard, 2013, p. 366).

Following Burston (2013) review of 345 publications about mobile learning and MALL made between 1994 and 2012, Stockwell & Hubbard (2013) proposed a list with ten principles for implementing technology applications, once it is considered that different approaches and guidelines should be used for different styles of teaching and learning. The ten principles are as follows:

- o Principle 1. Distinguish between affordances and limitations from the mobile device to the environment in which it will be applied when choosing a mobile app, task or activity. This affordances and limitations should be connected to second language acquisition;
- o Principle 2. Awareness of environment and distractions. Distractions both from the mobile dive (e.g. alerts and text messages) and by environmental settings should be considered for minimizing interference;
- o Principle 3. Pushing and respecting boundaries. Understand when and how often to use reminders or messages for the learner to engage in MALL activities;
- o Principle 4. Understand the audience (learner) and what means (mobile device) do they have in order to participate in MALL activity;
- o Principle 5. Prepare for accommodating language learner different learning styles;
- o Principle 6. “Be aware of language learners’ existing uses and cultures of use (Thorne, 2003) for their devices” (Stockwell & Hubbard (2013));
- o Principle 7. Mobile activities should be short and focused since interruptions by the device such as texts or alerts will eventually occur;
- o Principle 8. “Let the language learning task fit the technology and environment, and let the technology and environment fit the task” (Stockwell & Hubbard (2013). Be aware of what is being asked from the learner and if the task is suitable for the environment;
- o Principle 9. Almost all learners need assistance and training to use mobile devices for language learning in a meaningful way. Expect to guide learner in optimal ways of using apps or completing tasks;
- o Principle 10. Teacher and learner support and training must be provided.

It becomes clear that MALL environment and application has many variants and complexities; however, it also shows that, if preventive measures are taken, there is potential to engage students in activities and content at the same time that promotes interaction and participation (Stockwell & Hubbard, 2013).

Another aspect that made the use of mobile phones a topic of so many studies relating its use to learning is that it has a property of collaborative learning “that is, different learners are able to exchange their knowledge, skills, and attitudes through interaction” (Miangah & Nezarat, 2012, p. 312). This interaction can occur through various types of applications either through text messages, video call, mobile games, etc., allowing students to work on different skills.

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Areas in which students might benefit from MALL are:

- Vocabulary - Text-based material, SMS, Mail, With or Without Images
- Listening Comprehension - Audio files, music, podcast
- Grammar - Text-based material, SMS, Mail, With or Without Images
- Pronunciation - Recording, and sharing of audio files, Listening
- Reading Comprehension - Text-based material, SMS, Mail, With or Without Images

A research made by Duman, Orhon and Gedik (2015) on trends in MALL that gather information on sixty-nine studies on the timeframe from the year 2000 to 2012, shows an exponential increase in MALL research and studies, even if not all of them were based on any theoretical framework. The number of studies continued to grow since then.

M-Learning and MALL still have many challenges ahead, and its full potential is yet to be achieved, but it is moving in the right direction. MALL could use the example of CALL (Computer-Assisted Language Learning) to scale in a more meaningful way as well as cost-effective at the same time that is following new trends and adapting its content to be more meaningful, user-friendly and complete.

### 1.5 Second Language Acquisition (SLA)

The principle of MALL has a lot to gain by exploring Second Language Acquisition (SLA) theories and with digital technology becoming more and more pervasive is essential to understand how CALL and MALL can use those concepts of SLA to its advantage.

In this section, some of the main theories in SLA are analyzed in order to understand better how and when language acquisition occurs and how the process of Language Learning differ from the process of Language Acquisition according to SLA Theory. This section will help to elucidate some of the practices that the interviewees might mention as well as their perception of how SLA and mobile technology can coexist.

SLA is also studied by many other authors that approach different perspectives on SLA. From the individual perspective and learner's differences, social factors and processes (Ellis, 1985), how the environment in which the learner is immersed can shape communication and

language through behavior (Skinner, 1957), or the inherited ability to acquire language (Chomsky, 1956) also referred as ‘universal grammar’.

For the purpose of this study, the literature will revolve mainly around Krashen (1981, 1982), and Krashen & Terrel (1983) SLA theory since this is the theory that participants of this study claim to use as the basis to their practice.

### **1.5.1 Language Learning and Language Acquisition**

According to Krashen (1981), a person can develop second language skills and competence in two ways: learning and acquisition. Although most researches and studies use the two terms with the same meaning of ‘getting knowledge on’, this differentiation between the two terms is needed when it comes to language. Krashen continues to describe that ‘language learning’ requires a conscious and intellectual effort into transforming a message into something that has meaning, while on the other hand ‘language acquisition’ is the unconscious process of developing language communication skills without theoretical knowledge.

“The clear understanding of the differences between acquisition and learning makes it possible to investigate their interrelationships as well as the implications for the teaching of languages” (Schütz, 2018, para. 9).

### **1.5.2 Second Language Acquisition (SLA) Theory**

Krashen (1981, 1982, 1983) provides five central hypotheses for SLA: The Acquisition versus Learning Hypothesis; The Monitor Hypothesis; The Natural Order Hypothesis, The Input Hypothesis; The Affective Filter Hypothesis.

The Acquisition-Learning Hypothesis is, perhaps, the most significant of all five of Krashen’s hypothesis. It states that a person has two ways of developing a second language competence: acquisition, and learning. “Acquisition, a process similar, if not identical, to the way children develop ability in their first language.” (Krashen, 1982, p. 10), it occurs through a

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subconscious process where the learner does not have to be aware of the language they are acquiring, only the fact that is using it for communication. The second way, 'learning' is used to refer to "conscious knowledge of a second language, knowing the rules, being aware of them, and being able to talk about them. In other words, learning is "knowing about" a language, known to most people as "grammar", or "rules". Learning is most associated with adults while acquisition is most commonly used to refer as the "way" the children learn although there is no evidence that is a process reserved only for children.

The Natural Order Hypothesis states that "language acquisition research in recent years has been the finding that the acquisition of grammatical structures proceeds in a predictable order" (Krashen, 1982, p. 12) meaning that the understanding of some grammatical "rules" comes before formal education of such rules. This is most noticeable when acquiring first language, but the same principle can be used for acquiring second language.

The Monitor Hypothesis poses that acquisition and learning play a specific part to each other in SLA as shown in Figure 2. "Normally, acquisition "initiates" our utterances in a second language and is responsible for our fluency. Learning has only one function, and that is as a Monitor, or editor. Learning comes into play only to make changes in the form of our utterance, after it has been "produced" by the acquired system. This can happen before we speak or write, or after (self-correction)" (Krashen, 1982, p. 15).

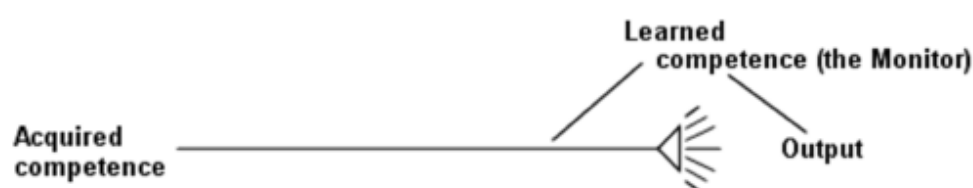


Figure 2. Acquisition and Learning in second language production. (Krashen, 1982, p. 16)

For this process to occur, three conditions have to be met: time, focus and knowledge of the rule. Time to think and to consciously and effectively apply the rules; focus on message and form; knowing what "rule" to apply. "To summarize thus far, Monitor use results in the rise in rank of items that are "late-acquired" in the natural order, items that the performer has learned but has not acquired" (Krashen, 1982).

The Input Hypothesis might be the most important to the field. Is the Input Hypothesis that tries to answer: “how do we acquire language?”

Let us first restate the question of how we acquire: given the correctness of the natural order hypothesis, how do we move from one stage to another? If an acquirer is at "stage 4", how can he progress to "stage 5"? More generally, how do we move from stage  $i$ , where  $i$  represents current competence, to  $i + 1$ , the next level? The input hypothesis makes the following claim: a necessary (but not sufficient) condition to move from stage  $i$  to stage  $i + 1$  is that the acquirer understand input that contains  $i + 1$ , where "understand" means that the acquirer is focused on the meaning and not the form of the message. (Krashen, 1982, p. 20)

This input hypothesis helps to understand how learners can progress through “stages” and gives a framework to measure learner’s advance and it follows three principles: 1. input through acquisition and not learning; 2. we acquire by understanding language when is presented with context where the learner receives information that he already has ( $i$ ) associated with extra information ( $+1$ ); 3. Communication emerges over time “as the acquirer hears and understands more input”.

The last hypothesis is the Affective Filter Hypothesis (Fig. 3) and it states that affective factors such as motivation, self-confidence, and anxiety play a role in learner’s possible acquisition.

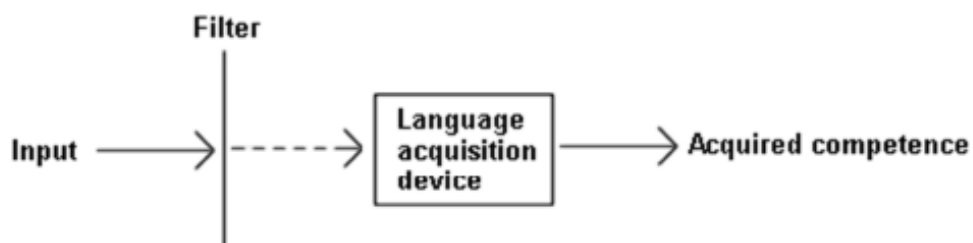


Figure 3. Operation of the “affective filter” (Krashen, 1982, p. 32)

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The affective filter hypothesis tries to relate outside factors in order to explain why some acquirers can have a great deal of language understanding but without performing equally in other skills such as reading or speaking.

Although much of this literature review of SLA focus on Krashen's (1981, 1982, 1983) five hypothesis, the reason for such focus is due to the fact that the educator that will take part in this study all claim that he is the author behind their methodologies. Krashen's SLA theory and hypothesis were confirmed since it was first was published (see Krashen, 1989, 2003; Truscott 1996, 1999) many other authors are equally important to the subject of language acquisition and means to achieve it.

Vygotsky's (1978) "Constructivist Learning Theory" states that language is primarily developed from social interaction in which children would be capable of achieving more than they would be able if they acquire new knowledge in the space to which he referred as the zone of proximal development (ZDP). If a child receives language in a context that he understands, then even if there is new knowledge in the language, he will be able to understand it as long as is in the ZDP.

Vygotsky's ZDP and Krashen's Input Hypothesis of  $i+1$  are usually compared even though these two concepts depend on different ideas on how development may be assisted.

### **1.6 Teacher Identity**

Many factors (economic, social and cultural) can potentially play a role when trying to understand how mobile technologies can change or interfere in one's identity. Mobile phones and other mobile devices can provide means for a person act socially by connecting such person to other individuals and information, at the same time it can be viewed as a token of economic status or an expression of one's personality.

When looking at the way teachers might relate to the subject of the use of mobile devices associated to their professional practices – the instruments they use and how they use it, alongside the methodologies in which they act – a number of factors might influence their views towards

the instrument that is proposed, especially if the same has the potential to influence their views and perception of professional identity and, thus, their own identity as an educator.

In this chapter, the literature review will approach the differences between Social Identity and Personal Identity followed by the definitions of Professional Identity and finally narrowing the review on the aspects of Teacher Identity.

### **1.6.1 Personal and Social Identities**

Personal identity is not a straightforward concept. Personal identity has been extensively discussed and theorized by philosophers, psychologist and sociologists and, to this day, it is still a matter of debate. Broadly speaking, the philosophical approach to personal identity refers to the question how one can stay the same person over time, in other words, is one person at one point in time the same person at another point in time? The “continuity” required for a person to stay “the same” is one of many questions that arise when looking to conceptualize personal identity.

To understand how these individual identities are formed we have to look not only at the person, but how the person came to be and the social factors surrounding them. Thus, identity is the marriage between what is unique and individual about a person with the social aspects that surround them.

Identity Process Theory (Jaspal & Breakwell, 2014) is a theory of individual identity. It states that the identity of a person encompasses many different elements from one's experience and background. IPT tries to explain how a person incorporates the individual with the social, being that its core is how one maintains and construct their individuality. This social impact on one's perception of personal identity brings what Jenkins (1996) calls Social Identity.

Social Identity (Jenkins, 1996) can be understood as a part of the individual that derives from the acknowledgment of his or her membership in a social group or groups aligned with the significance attached to this membership (Tajfel, 1978, p.63). In other words, one can have a view of the self depending on their view of the group (or groups) that it belongs and the role it plays in each particular group.



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Tajfel and Turner (1986) defined social identity theory (SIT) as the aspects of an individual's self-image that originates from the social groups to which the individual feels he or she belongs. "SIT then is a theory of intergroup relations rather than a theory of self and identity in Tajfel's work" (Pehrson & Reicher, 2014, p.99).

These Social Identities are based on group membership while Personal Identity relates to the individual towards others. However, this rather simplistic connection is questioned by what is known as Identity Process Theory (IPT). IPT sees a distinction between social and personal identity. Identity (and the 'self') needs a reflexive quality in order to be qualified, one that can emerge from a series of representations within a particular knowledge structure (Breakwell, 2014).

### **1.6.2 Professional Identity**

Given the complexity of identity, how does this concepts transit to a professional setting and, therefore, a professional identity? There is not a single definition that explains how professional identity is formed or categorized; instead, a series of studies that look at matters of the self within the professional context.

Although there is no consensus of what the definition of professional identity is, four major characteristics have been identified: professional identity as reference to the individual and the context of his or her actions; professional identity as a sum of sub-identities in harmony; and professional identity as requiring involvement and activity of the professional (Beijaard, Meijer, & Verloop, 2004).

Through the work of Beijaard, Meijer, & Verloop (2004) professional identity relates to how the individual and the context of the person's actions. From this notion, the concept of teacher identity can also be understood as being a process constant negotiation between their personal identity and the notion that others have towards them as being teachers, how the many identities coexist to form teacher identity, and finally the intersocial process along with how they gather experience and the sharing of experiences contribute into forming these teacher identities.

As a whole, professional identity is understood as to how we perceive ourselves among our peers in a professional scenario and the factors associated with it. The studies vary from looking

at how this identity can be developed while still in professional formation (e.g., college) and how it shifts and moved to a professional setting (Shahri, 2018), formed through social interactions and observation of our peers (Ibarra, 1999) based on shared knowledge and expertise.

This professional identity, much like personal and social identity is always under construction and under the influence of factors (e.g., geographical, economic, social) that might alter or contribute into shaping it at any point. “The notion that experimenting with possible selves is an important way actors acquire identities is consistent with some well-known ideas about occupational socialization and how the self is constructed in social interaction” (Ibarra, 1999).

### **1.6.3 Teacher Identity**

Teacher identity is no different when it comes to the difficulty of categorizing it. “Teachers take on ‘multiple identities’ when engaging with the diversity of colleagues and students.” (Brown and Heck, 2018) and it can be described as “dynamic, multifaceted, negotiated and co-constructed,” (Edwards & Burns, 2016, p. 735) and “teacher identity has proven a rich site for exploring teachers' teaching lives as it involves the complex, shifting interplay between differentially powered forces, both internal and external to the individual teacher” (Reeves, 2018)

Teacher identity is constantly being constructed therefore they are constantly “(re)negotiating their teaching identities, in the social, political, and ethical contexts of schools” (Reeves, 2018) and faced with the light of ICT “reforms in the education system may lead to change in teacher education systems” (Avidov-Ungar & Forkosh-Baruch, 2018) and the changes in the perception towards education are required forcing teachers to review their own identities (Hargreaves, 2003).

The study of this development of teacher identity is relevant because their identities shift over time (Olsen, 2016) and the dynamic nature of identity and emotions may also affect classroom practice (Shahri, 2018).

In a sociocultural aspect the role of mediation, which refers to the role of cultural tools, signs, and concepts, relates to the construction of teacher identity in what Holland and Lachicotte (2007) stress as the role of appropriation of cultural artifacts in the development of identity.

## 1. Literature Review

Teacher identity is, therefore, viewed as guided by emotions, both shaped by and shaping teacher practice and mediated by cultural artifacts (Shahri, 2018).

Although the amount of work that deals with teachers' perception towards mobile technologies is still scarce, some findings suggests that, since their identity has those dynamic, multifaceted and co-constructed aspects, they are overall receptive to digital technologies aligned with their practices (Avidov-Ungar and Alona Forkosh-Baruch, 2018) given they have proper ICT knowledge and preparation.

In a study that examined the perception of pedagogical innovation by teacher educators, Avidov-Ungar and Alona Forkosh-Baruch (2018) state:

The findings of this research show that the perception of teacher educators' professional development regarding innovative pedagogy indicates on one hand on their rather well-established status in terms of their role definition, which is adapted to needs of innovation. On the other hand, it seems that teacher educators are in the midst of this process, in which they ask questions, consider their position and ponder about the shift from their current position to the situation the aspire to achieve in their practice. Therefore, effort needs to be made for supporting teacher educators in all required aspects. (p. 190)

This statement is important when considered those that search for a better understanding on whether technology (e.g., mobile devices) has any impact on their view on teacher identity.

After reviewing the aspects of the digital learning environments with emphasis on m-learning and how is being used to teach and learn a second language (CALL and MALL), theories on SLA and how the process of SLA occurs and can be associated with this 'mobile learning environment' and concepts of identity and teacher identity, all found very pertinent to the research on teacher's perception of the use of MALL, some questions arose. These questions are described in the following chapter of methods.

With the knowledge gained with the literature review, it is expected to answer those questions above and hopefully achieve a better understanding of how teachers perceive mobile devices for the acquisition of a second language.



## **2. Methods**

This chapter describes the methodology chosen in order to answer the questions that arose following the review of the literature.

Being that this study deals with topics concerning the identity and the perception of educators towards mobile devices and its use for second language acquisition, qualitative research based on grounded theory was chosen in order to approach these issues.

### **2.1 Introduction**

First, I will approach the research questions that guide this study. The second section aims to discuss the research design focusing on characterizing grounded theory and the decision for applying it in this study. Third, I will approach the theoretical sampling, describing how participants were chosen, their characteristics as well as their importance. Fourth, I will talk about the interview procedures utilized, the dynamic of it, and the stages necessary to best get the data needed. Last, I will describe how the data collected during the interviews were sorted, and the process of analysis that followed.

### **2.2 Research Questions**

Dealing with topics such as perceptions and identity requires a qualitative research approach that is exploratory in its nature. Trying to relate some aspects presented in the literature review section, an attempt to gather a better understanding about what the perception of second language

educators towards mobile devices in the context of education becomes a relevant and exciting point to explore.

The fact that MALL does not directly approach Krashen's second language acquisition theory as an active reference serves as motivation to try to investigate how second language educators that based their practices in Krashen's theory view themselves located inside this model of m-learning.

The same motivation and relevance can be found in the scarcity of literature that deals with the second language educators' identity. When it came to finding definitions of second language educators, literature does not provide a clear view on how second language educator are categorized, let alone second language acquisition educators.

Faced with a lack in the literature that dealt with issues presented above, three questions arose to form the foundations for this research:

1. What are SLA educators' perceptions towards mobile devices and its use for language acquisition?
2. How the integration of mobile devices in SLA practice might influence educators' perception of professional identity?
3. When confronted with a change (e.g., mandatory integration of mobile devices in class), how SLA educators view themselves coping with transformations in their practices?

## **2.3 Research Design**

After much consideration about what would be the best qualitative research design for this study, grounded theory stood out as the one that would better produce the explanation for the case in hand.

## Methods

### 2.3.1 Grounded Theory

Grounded theory was first created in 1967 when researchers Barney Glaser and Anselm Strauss felt that the theories used at the time were not sufficient enough to describe some of the phenomena their participants were undergoing during their study.

Glaser and Strauss (1967) suggested that theories should generate from data gathered from participants descriptions and experiences. Grounded theory is a qualitative research design in which the researcher aims to broadly explain a phenomenon, process or interaction from the data gathered from participants, documents and notes (Strauss & Corbin, 1998), therefore creating a theory "grounded" in data.

After the discovery of Grounded Theory (Glaser & Strauss, 1967), and as time passed, and other researchers started to apply its methods, many publications arose giving birth to different approaches on how and when to apply this research design (Glaser, 1978; Glaser & Strauss, 1967; Strauss, 1987; Strauss & Corbin, 1990, 1998, 2015; Charmaz, 2005, 2008).

The two more popular approaches for grounded theory are Strauss and Corbin (1990, 1998, 2015) pragmatic and ontological approach and the constructivist approach of Charmaz (2005, 2008). In both approaches (Glaser & Corbin, 1990, 1998, 2015; Charmaz 2005, 2008) the researcher typically conducts a series of interviews to collect data, therefore, creating the categories that will, after saturation is reached, compose the theory.

In Strauss and Corbin (1990, 1998, 2015), the researcher aims to develop a theory by systematically choosing the best-suited participants for the study (theoretical sampling), conducting a series of interviews and analyzing its transcription along with other support documents, observations and field notes. After theoretical sampling is defined, an interview is conducted where the researcher, as he/she asks the questions that are relevant for the study, takes notes about the interviewee language, emotions, expressions and overall attitude towards the subject, later the audio and transcription of the interview is analyzed, and the researcher begins the process of "open code" the data. As interviews progress and more data are gathered, data are constantly paralleled in a process called "constant comparison", giving birth to the lower level-concepts (nodes). Following this process memos concerning aspects of the interview as well insights are written, preliminary categories start to emerge and, finally, core categories that, together, will construct a theory.

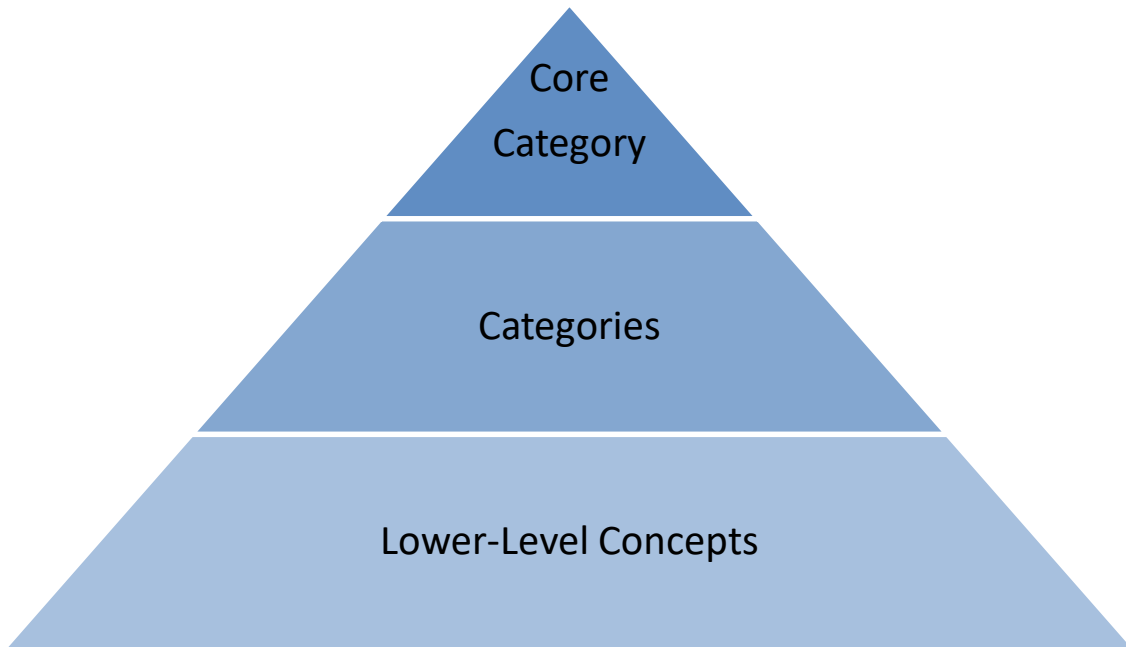


Diagram 1. Constructing a grounded theory is like building a pyramid with each level of concepts on top of the others. (Corbin & Strauss, 2008)

In Strauss and Corbin (1990, 1998, 2015), the researcher aims to develop a theory by systematically choosing the best-suited participants for the study (theoretical sampling), conducting a series of interviews and analyzing its transcription along with other support documents, observations and field notes. After theoretical sampling is defined, an interview is conducted where the researcher, as he/she asks the questions that are relevant for the study, takes notes about the interviewee language, emotions, expressions and overall attitude towards the subject, later the audio and transcription of the interview is analyzed, and the researcher begins the process of "open code" the data. As interviews progress and more data are gathered, data are continuously paralleled in a process called "constant comparison", giving birth to the lower level-concepts (nodes), categories and, finally, core categories that, together, will construct a theory.

The second most used approach of grounded theory is the constructivist method of Kathy Charmaz (see Charmaz 2005, 2008) where she advocates for a social constructivist view in which - instead of focusing on studying a single process or core categories like Strauss and Corbin (1990) proposed - multiple realities, worlds and the complexities of particular views, perceptions and actions are emphasized (Creswell, 2012).

According to Charmaz (2006), a constructivist grounded theory should have flexible guidelines, and the approach should be interpretative, focusing on a generating a theory that is co-



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created between researcher and participants, emphasizing their individualities biases, views, values, beliefs, and assumptions. Although Charmaz uses the same process as Corbin and Strauss (1990, 1998, 2015) for gathering rich data (theoretical sampling, memoing, open coding, constant comparison), she supports using active coding in an interpretive way by using real quotes or words found in the interviews (Creswell, 2012).

The role of the researcher is vital in Charmaz approach to grounded theory, since the researcher's world, opinions, background, bias, values, and overall identity is an intrinsic part of the creation of theory as he/she is the one making decisions about the categories, process, questions. For Charmaz, any conclusions reached by grounded theorists are, therefore, suggestive, incomplete, and inconclusive (Creswell, 2012).

	Objective/Positivist (Glaser & Strauss, 1967)	Relative/Constructivist (Charmaz, 2014)
Ontology	Realist	Relativist
Epistemology	Objective	Subjective/Interpretivist
Impact on methods	Promotes strict adherence to steps embedded within the research approach	Highlights flexibility; resists mechanical application
Product of grounded theory research	Generalised, explanatory theory of a process, action, or interaction that transcends time and context	Subjective, descriptive theory of a process, action, or interaction dependent on time and context

**Table 2. Paradigmatic assumption and characteristics of grounded theory methodologies (Groen et al., 2017).**

After considering Strauss & Corbin (1990, 1998, 2015) and Charmaz (2006, 2008) approaches to grounded theory, and relating both paradigmatic assumptions, the research design optioned for using both Straus & Corbin (2015) guidelines for conducting grounded theory research and analysis of data, and Charmaz's constructivist approach, since this study also assumes an ontological constructivist stance. This choice of design allows for the researcher to have clear guidelines for selecting the theoretical sample needed to conduct the data analysis at the same time that it would take into consideration the multiple social, economic and cultural realities allowing conclusions to be subjective and interpretative.

A research framework, as presented in Figure 4, was developed in order to organize and guide the steps necessary to proceed with this study.

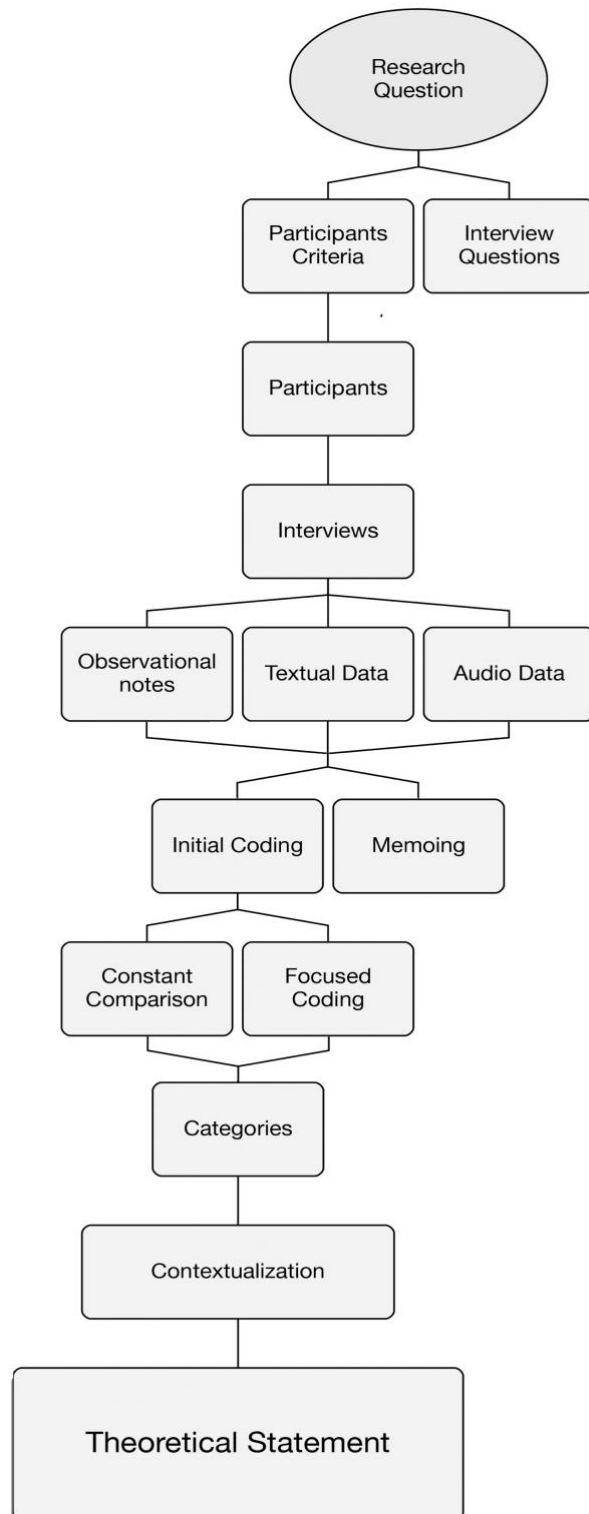


Figure 4. Research Framework adapted from Charmaz (2006, 2008)

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It was impossible for me to disassociate myself from the topic of this study since I worked as an educator for almost seven years and I also encountered myself having to deal with the same issues and challenges as the ones the participants of this study are asked to reflect upon. I'm aware of my views and bias towards the subject of the study, but I embrace this bias, therefore considering myself as part of the theoretical sample as much as the participants, and, by doing so, as a part of the process of the attempt to construct a theory adopting Charmaz's constructivist approach to grounded theory.

### 2.3.2 Participants

Participants were chosen according to the theoretical sampling method, initially developed by Glaser and Strauss (1967), is a type of purposive sampling usually associated with grounded theory in which samples are chosen according to its potential contribution to the generation of a theory (Ritchie, Lewis, and Nicholls, 2003).

Glaser and Strauss (1967) described theoretical sampling as:

The process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what data to collect next and where to find them, in order to develop his theory controlled as it emerges. This process of data collection is by the emerging theory, whether substantive or formal. (p. 45)

Following the aspects proposed by grounded theory scholars, a set of criteria was developed in order to select a group of participants that would - through an open-ended, semi-structured, in-depth interview - provide the insights and answers to the questions proposed by the research and, as a consequence, produce data that would be rich in content as well as a vivid panorama of what second language educators views are towards the topic of this research. In order to fit the criteria needed to participate in this study, educators should fulfill the following requirements:

- to be a second language educator for at least two years;
- to have taught classes with groups in the past year;

- to base his/her practice - at least partially - in Krashen's Language Acquisition Theory;
- own at least one of the mobile devices categorized by the model used for m-learning.

Having a personal background in second language education through Krashen's Language Acquisition Theory (1985), allowed me to access different groups and communities of second language educators - mainly based in the São Paulo area in Brazil – that also followed language acquisition principles. This network facilitated the gathering for participants that would form the theoretical sample, and that also could produce the richest data possible for this work.

A pre-selection of twenty-five educators that fulfill the necessary requirements to be a part of this study was made. An e-mail contacting them was sent explaining the intent of this research and inviting them to participate in the study.

Although almost all educators showed interested in participating in the study, only twelve educators ended up being selected. This was due to unavailability in some of the other educators' schedules to be interviewed or that they, in some way, ended up not fulfilling all the criteria necessary.

Although all the participants describe themselves as Second Language Educators, they come from various academic backgrounds. This information became particularly relevant since most educators that responded positively about being part of this study claimed that having a diverse background - both academic and personal - was viewed as a differential when it came to relating particularities of second language teaching with what it was required for creating optimum scenarios for language acquisition.

The group of participants was able to provide a diverse enough group that could enrich the understanding of what could be the identity of a second language acquisition educator because of their age group, academic backgrounds and the educational scenario in which they are professionally acting.

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Participant	Gender	Age	Academic Background	Educational Setting	Average Number of Students Per Class	Student's Average Age	Years of experience
A	Female	25-34 years old	History	Language School	3	7	4 years
B	Female	25-34 years old	Psychology	Language School	4	8	6-10 years
C	Female	18-24 years old	Languages	Self-Employed	6 to 10	4	6-10 years
D	Female	25-34 years old	Mental & Public Health	Self-Employed	4	11	5 years
E	Female	25-34 years old	Languages	Regular School	16 to 20	12	11-15 years
F	Female	25-34 years old	Social Sciences	Regular School	26 to 30	16	11-15 years
G	Female	25-34 years old	Social Sciences	Self-Employed	4	10	4 years
H	Female	25-34 years old	Languages	Language School	6 to 10	7	6-10 years
I	Female	25-34 years old	Languages	Language School	4	10	6-10 years
J	Male	25-34 years old	Sociology	Self-Employed	3	11	4 years
K	Male	25-34 years old	Languages	Language School	3	11	4 years
L	Male	18-24 years old	Psychology	Self-Employed	11 to 15	5	5 years

Table 3: Academic background and educational setting.

The twelve participants are all Brazilians, they are comprised of three males and nine females, three from the age group "18-24 years old" and nine from the age group "25-34 years old".

As for the academic background, of those twelve educators, five graduated in second language education, two from social sciences, two from psychology, one from Mental and Public Health, one from History and one from Sociology.

It is not uncommon for second language educators to permeate among different educational settings; therefore, it becomes relevant to account for their current professional status and educational setting in which they act. For the purpose of this study, educators were categorized according to the educational setting they are currently acting. The educational setting was divided into "language school", "regular school" and "self-employed". "Language School" refers to private schools that have as the primary purpose of the education of foreign languages, being free to apply any methodology or to follow the curriculum they chose to. "Regular school" refers to either public or private schools that follow a curriculum in which language education is one among many others. "Self-employed" refers to second language educators that are currently teaching either through private classes or small groups. Similar to "language schools", "self-employed educators are free to choose the methodology, curriculum, and content that best suit them.

When it comes to their current professional status, educators are categorized according to their current place of employment. Five educators were from language schools, five were self-employed, and two are currently working for regular schools.

Educators were asked about how many years they have been working with language education. Four educators have 4 years of experience, two have 5 years, four have between 6 and 10 years of experience, and two have between 10 and 15 years of experience in second language education.

The average student per class was also accounted for. Three educators claimed that the average student per class was of 3 students, four said 4 students, two said to have from 6 to 10 students in a class, one educator claimed to have between 11 and 15 students, one from 16 to 20 students and one between 26 to 30 students.

Educators also informed the average age of their students. Five educators said to have students averaging between 4 years old and 8 years old, six educators have students averaging between 10 and 12 years old, and one educator average her students at 16 years old.

Although it was not the first intention of this study to aim its efforts in understanding what the perception of second language educators towards MALL is exclusively in children and teens education, it becomes relevant to look at data through these lenses.

One of the criteria set for the selection of this theoretical sample was that the educator should own at least one of the devices categorized by m-learning. Educators were also asked about what mobile devices they own as well as their perception towards their use of the same as presented in table 2.

Participant	Gender	Age	Mobile Device	Mobile Use
A	Female	25-34 years old	Mobile AND Tablet	Not so much
B	Female	25-34 years old	Mobile Phone	Regularly
C	Female	18-24 years old	Mobile Phone	A lot
D	Female	25-34 years old	Mobile Phone	A lot
E	Female	25-34 years old	Mobile Phone	Excessively
F	Female	25-34 years old	Mobile Phone	Regularly
G	Female	25-34 years old	Mobile AND Tablet	A lot
H	Female	25-34 years old	Mobile AND Tablet	A lot
I	Female	25-34 years old	Mobile Phone	Regularly
J	Male	25-34 years old	Mobile Phone	A lot
K	Male	25-34 years old	Mobile Phone	A lot
L	Male	18-24 years old	Mobile Phone	A lot

Table 2: Mobile device ownership and frequency of use.

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Nine educators said to only own a mobile phone while three claimed to, along with a mobile phone, to also own a tablet.

Educators were asked about what was their perception of their mobile device use and the amount of time they would spend on their devices. Answers for this question varied from “not so much”, “regularly”, “a lot” and excessively. One educator claimed that, although owning a mobile phone and a tablet, did not use her devices that much. Three educators viewed themselves as using their mobile phones regularly but within what they considered as normal and healthy use. Seven educators claim to use their devices "a lot" and one educator had the perception of using her device excessively.

This demographical data of the participants set the scenario that would help to conduct the analysis better and interpret data provided during the interviews and the textual data that came from it.

## **2.4 Procedures**

In total, 12 interviews were conducted. The length of the interview averaged one hour. The shortest interview had a duration of 32 minutes, and the longest was 1 hour and 47 minutes. All interviews were made via videoconference and were followed by a conversation about the topic of the study in which the researcher would share his thoughts while taking notes that could be further used as textual data.

### **2.4.1 Instruments and Interview Procedures**

A direct e-mail was sent to twenty-five possible participants informing them about the intentions of this study along with an invitation collaborate by participating in an interview, twelve educators responded positively. A second e-mail was sent to set up a date and time for the

interview. Since all participants are residing outside Portugal, the instrument chosen for conducting the interview was via videoconference.

For conducting the interviews, a semi-structured script (Appendix A) containing 30 questions was used as a guide. The script started with demographical questions concerning participants, age, academic background, the average number of students per class and their average age, and types of mobile devices they own. The following questions were all open-ended questions and related to participants perspectives and perceptions towards the subject of this study and guided by the research questions mentioned previously. The script for the interview suffered changes as needed and as participants contributed with insights and remarks that led to the creation of new questions. Questions also varied to suit the educational setting in which participants acted.

The interviews were conducted following the six stages for an in-depth interview (Legard, Keegan & Ward, 2003): arrival, introducing the research, beginning the interview, during the interview, ending the interview and after the interview. Even though the interviews occurred via videoconference, all the stages were able to be completed without any problems.

The arrival stage was used to greet the participant, to thank them for their time, to establish a relationship between researcher and participant, and to assess if the participant was in any distress that would in any form be prejudicial to the following interview. At this stage, an assessment of the viability of technical issues was also made in order to make sure that both interviewer and interviewee could be heard and listened to without any problems.

After establishing a relationship, assessing and addressing any possible issues, the research was introduced in a more detail manner, making them aware of their relation and importance for the investigation. At this stage, the participants were also reassured of the confidentiality of their answers as well as asked to permit to record the interview.

The interview began with questions of demographical nature such as age, academic background, and the number of years they have been teaching. The interview, although being semi-structured and able to accommodate any claims or insights that the participants could provide, followed three distinct moments that dealt mainly with: "educator traits and views towards mobile devices", "second language acquisition and mobile technologies" and "coping with changes in practices and possible meaning for their identity". These "moments" were interleaved with other questions that would allow them to ponder about their answers and, by doing that, providing another moment for reflecting about their discourse.



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Opting for a semi-structured script proved to be very valuable since flexibility towards the questions ended up producing valuable insights and opportunities for gathering data that otherwise would be hard to acquire. The questions used for the interviews suffered some changes and adjustments according to participants profile (e.g., educators that are currently working for language schools had questions that dealt with a different scenario than educators working for regular schools).

At the end of the interview, the participants were invited to add anything they would consider important or to make any considerations about what they just experienced by taking part in the interview.

Following the end of the interview, I made myself available for any questions they would have about the research or to have a conversation about the topics that were approached during the interview to which I would also share my personal views towards some of the topics. Although not mandatory for participating in this study, all twelve participants showed interest in having this moment after the interview. This after the interview moment was documented through a series of notes that would later be a part of the textual data that would be analyzed.

## **2.5 Analysis**

All the interviews were transcribed in its entirety and resulted in 163 pages of textual data. Transcribing all the of the twelve interviews in its entirety proved to be a very time-consuming activity, but one that was also very helpful in providing insights and giving opportunities to create further notes and memos as the process evolved.

As soon as data started to be gathered, so was the beginning of the process of analyzing the documents that formed the compilation of information needed on the subject. Data were sorted and analyzed using NVivo 12 software, and following the guidelines provided by grounded theory, the analysis began by looking at the transcription of the first interview and initiating what is referred as 'open coding'. Extracts of the interview are analyzed and codes referring to views, perceptions, values, opinions and so on, are created, thus generating a list of codes that combines terms created by the researcher's interpretation of the interviewee's discourse and actual extracts of interviewee's discourse.

After the first interview was coded, memos containing a more detail explanation about the participant discourse were created. The first series of codes were more descriptive, relating to specific passages of the interview without giving it much interpretation. Codes such as “acquisitions factor”, “mobile definition”, “strategies” and “language importance” were used to situate the analysis in a broader field to facilitate next steps.

Memos contained insights that the researcher might had when reflecting about participant’s discourse as well as field notes. Table 4 contains an example of how the process of memoing occurred. Memos received a name relating to the topic that conveys for easy identification, followed by the question to contextualize and to give meaning to the answer. The next row contains the transcription of the answer given by the participant in its entirety. Finally, a note containing the overall meaning of participant’s answer, the interpretation of some part of the answer or quote, some information about any particularities and, finally, when is the case, notes about any insights that might be relevant to talk about in the discussion section of the work.

<b>MEMO “J” 02 – LANGUAGE EDUCATION and LANGUAGE EDUCATORS</b>
<b>Researcher:</b> How do you see the second language educator compared with educators of other disciplines like math, geography, chemistry, etc.? Do you see differences between them?
<i>J: I don't think there is a difference necessarily, but I think that there's a relationship between student-educator that is different because I think it involves more the student's areas of interest, things you have in common and for not being too focused on the theme itself, the relationship gets closer. I think that there's this little difference.</i>
<b>Researcher Note:</b> J says that although he doesn't see any difference between educators, he sees a difference when it comes to the relation between students and educators. The quote “things you have in common and for not being too focused on the theme itself, the relationship gets closer.” relates to the “bond” and “trust” that educators referred as one of the contributions for acquisition.

Table 4: MEMO "J" – Language education and language educators.

This first analysis also served to identify what questions were more relevant, and if any changes in the interview script might be necessary. The process proved to be valuable since participants could be acting in different professional settings - as mentioned before as language

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schools, regular school, and self-employed – and minor adjustments and considerations were constantly being made.

With the transcription of the second interview at hand, the same process of open coding occurs, but now this interview is compared with the first interview. This process of looking at the new data as well as the data previously analyzed is called ‘constant comparison’. Similarities and contrast begin to arise, patterns emerge, new codes appear, and codes between the two interviews can merge or originate another more descriptive code. Along with the coding and the constant comparison, the process of memoing is also repeated.

The process of constant comparison is repeated throughout the analysis, each time allowing new codes to emerge, creating insights that could be further explored in the interviews that would follow and producing memos that would help in theorizing the phenomena as well answering the research questions previously presented.

With all twelve interviews analyzed and compared, codes merged into more descriptive codes or embedded and sorted into parent and child nodes, the process of creating categories begins. Five categories were created from the parent codes created along the process of analysis. The categories are “Inner Features”, “Relevancy”, “Practices and Knowledge”, “Mandatory Use” and “Outside Agents”.

Category	Description	Parent Nodes
<b>Inner Features</b>	How educators’ perception on their own identities might shape their use of mobile devices for SLA.	<ul style="list-style-type: none"> <li>- Identity;</li> <li>- Mobile Identity;</li> <li>- Dialog.</li> </ul>
<b>Relevancy</b>	Educators’ views on mobile devices and the relevancy needed for SLA.	<ul style="list-style-type: none"> <li>- Know-how;</li> <li>- Re-signifying Mobile;</li> <li>- Practices.</li> </ul>
<b>Practices and Knowledge</b>	Understanding how educators’ perceptions on their level of mobile affordances knowledge and their views on the potential in mobile devices for SLA can be balanced by their perception of relevancy for SLA. Practices and rituals of mobile use in SLA classes.	<ul style="list-style-type: none"> <li>- Practices;</li> <li>- Rituals;</li> <li>- Know-how;</li> <li>- Attitudes;</li> <li>- Bonding Through Mobile.</li> </ul>

<b>Mandatory Use</b>	How educators' view themselves acting when confronted with authoritarians' policies and the possibility of mandatory use of mobile devices.	<ul style="list-style-type: none"> <li>- Mandatory: Identity;</li> <li>- Mandatory: Practice;</li> <li>- Mandatory: Dynamic.</li> </ul>
<b>Outside Agents</b>	Educators' views on students' personal use of mobile devices, proficiency and autonomy.	<ul style="list-style-type: none"> <li>- Student Use;</li> <li>- Student Mobile Know-how;</li> <li>- Autonomy</li> <li>- Distraction</li> </ul>

Table 5. Categories

The category "Inner Features" was created after combining and interpreting what was found about educators' perceptions about themselves, how they act in their educational setting, their vision on their mobile use. This category aims to serve as a starting point in understanding how educators' identity might influence their use of a mobile device for promoting SLA.

“Relevancy” is a category that deals with how educators relate mobile devices to what they consider pertinent and appropriate for SLA and the scenario in which they act.

“Practices and Knowledge” focus on the link between educators' perceptions of their mobile affordances know-how and the potential they see in using mobile devices for SLA. It aims to understand what participants’ practices and rituals are when using mobile devices.

“Mandatory Use” is the category created to make sense of the answers provided by educators when confronted with a hypothetical scenario in which they are obligated to inserted mobile devices in their classes, without previous debate, training or reason. This category is the guide to interpret how educators view themselves personally (identity) and professionally (practice) faced with technological implementations without dialoguing about relevancy for SLA. The data collected for creating these categories came from three parent nodes: Mandatory Identity, Mandatory Practice, and Mandatory Dynamic.

The final category created, named "Outside Agents" deals with educators’ perceptions towards student use of mobile devices, their knowledge of the educational use of their mobile

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devices and other outside factors such as the matter of distraction that can occur through their devices.

The creation of those categories was vital for the discussions that follow the results section. Much of the discussion is based on the categories created can be intertwined to form a new model for MALL aligned with Krashen's SLA theory.



# 3. Results

In this section, the results following the analysis of the data collected through interviews and field notes are presented. The results are presented in three sections: educator's inner matters, SLA and MALL, and readiness. The first section, "educators' inner matters" relates to the research question "How the integration of mobile devices in SLA practice might influence educators' perception of professional identity?" and deals with how educators perceive their identity faced with mobile technologies in their educational setting. The second section, "SLA and MALL", presents the results used to answer the research question "What are SLA educators' perceptions towards mobile devices and its use for language acquisition?". It focuses on what are the aspects of SLA that they interpret as being related to MALL and how educators would make use of mobile devices in their classes. The third and last section, "Readiness" presents the results needed to answer the research question "When confronted with a change (e.g., mandatory integration of mobile devices in class), how SLA educators view themselves coping with transformations in their practices?". The results are related to their perception of their own mobile affordances awareness as well as their peers, and their opinions on how mandatory changes in their practices could affect their identity.

## 3.1 Educators' Inner Matters

When asked about what it means to be an educator, the results show that participants' perception form a vision of a professional that sees him/herself open to embrace changes, that helps students to cooperatively build knowledge and as part of a process that is not considered as a one-way street, but one in a constant pendulum movement of giving and receiving information

and using this exchange to understand students' needs and interests. The results presented in this sub-section are a product of the analysis of the data comprehended in the category "Inner Features".

In the eyes of the majority of participants, educators provide not only academic knowledge, but civil and social formation as well or, as participant "L" stated, "(it) is to take responsibility for a process of a part of someone's formation. An academic, social, and moral formation". This responsibility comes, as participant "B" pointed out, as "a process of creating students' identity" since an educator is understood by the participants as a person that also provides a model outside family context for students to understand the "outside world".

The information and knowledge provided by educators is, as brought out by most participants, what makes students interpret some aspects of social life that students will encounter in their future. Using participant "J" quote about this connection:

It is to enter in the symbolic, that helps students make cultural connections and understand where we are, how we got here and how one can act harmoniously in society. That can also happen without education, but education provides this in a lot more structured way.

Since all participants are second language acquisition educators, they were asked about how they see themselves as educators. This question brought not only a moment for them to reflect about their own practices, but the role in which they see themselves immersed in. This proved to be harder for them than they expected.

The answer to the perception of self as educator varied from participant to participant, mainly because of the educational scenario in which they are currently acting. Participant "E" – that moved from teaching in a language school to teaching in a regular school - sees herself shifting practices and postures depending on the class she is giving while participant "K" – that have always taught in language schools - sees himself as an educator that is always "open to students demands" and to have a dialog about his practices. Participant "K" says:

I think I count on the dialog to do this - and I really like doing this - to talk to students, to understand what they want and to reach to conclusions together about how we can learn what we want to learn in a way that is interesting for them.



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Participant “L” – that is currently self-employed and deals with other professional projects besides teaching – said, "I'm always apprehensive about using this title", since the term “educator”, in his view, have a deeper meaning than “teacher” and relates to someone that transmits not only knowledge about a certain subject but also social values and act as a role model. While participant “L” is somewhat reluctant to use the title “educator”, participant “B” – that works for the same language school for 6 years – embraces being an educator and what she considers to be her role. Participant “B” says, “In the English school that I work for, I don’t think I’m there just to teach English. I think I’m also there to teach things about the world, relations, anyway... to be a real reference outside the family context”.

Another side of this view of self as educator is given by participant “H” when she says that she is in a moment where she is constantly doubting her capabilities and herself as educator. Participant “H” insecurities come as a surprise since she has been working as an SLA educator for more than 6 years mostly teaching small groups in language schools and private classes, participant “H” continues by saying "I feel that I'm in front of a door, looking at a very dim light coming through it. I have no idea what's behind it, but I want it anyway". This idea relates to a desired of being an educator but at the same time of fear of not knowing if she is in the right path when it comes to her ideas and opinions on education. She summarizes her perception of herself as an educator by saying that she "thinks that she is an educator that searches the 'not knowing'(o *não saber*) [*sic*]". This duality in participant “H” remark – of wanting the ‘not knowing’ – relates to the openness that most participants stated as a characteristic of being an educator.

The words "flexible" and "open" were used by most participants to describe themselves and the state in which they approach their classes and what their expectations towards the students are. Participant “G” uses this example of openness and flexibility when she characterizes herself as educator. Participant “G” talks about how her ‘openness’ allows her to transform her classes in case she needs to: “I think I am very flexible. In a sense that many times I arrive for a class and for some reason, because of the student or anything like that. The class is just a skeleton.”. She continues to explain, “I have no problem in undoing (the planning), but to remain only with the content and try to redo it with other questions that are presented on the spot”.

Figure 5 illustrates the words participants used when describing their identities as educators according to the educational scenario in which they act.

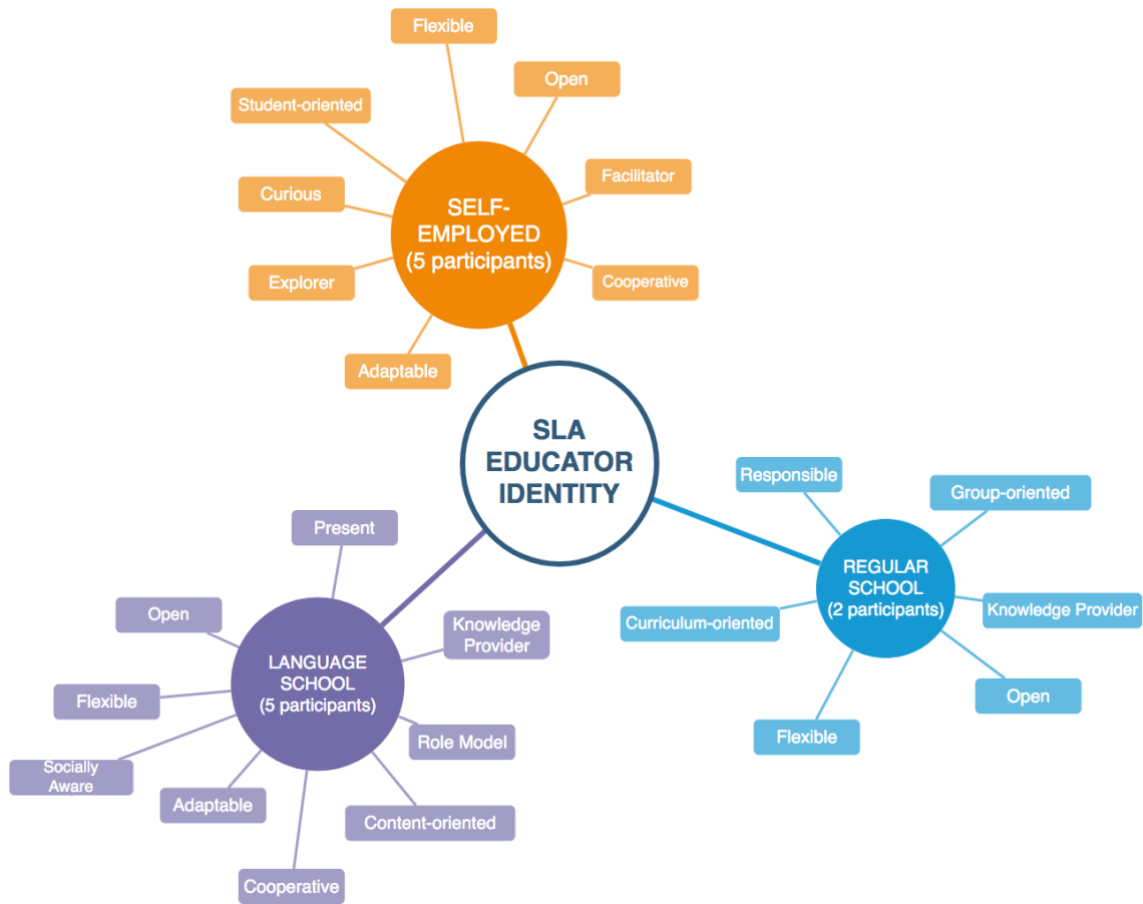


Figure 5. Identities according to participants' view and educational setting

Each participant described some traits that, when combined, could give a better glimpse to the identity of participants and, therefore, what the second language acquisition educator identity is. Overall, their perception points to someone that is concern in transmitting language education, preoccupied with students' personal demands, open to reflect about their practices, flexible towards class planning and last-minute changes, and aware of the social impact of second language education.

The participants that were also asked to characterize their peers that, in their view, use mobile devices appropriately in class activities and have mobile devices embedded in their practices. It is important to notice that, although the term “mobile device” is frequently used during the interviews, participants are almost always referring to smartphones, since this is the device that all participants have and stated that use more frequently for their classes, therefore, their view is mostly towards the use and practice of smartphones by their peers.

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The access to other educators' practices can come from different channels and change according to the setting in which the participant is acting. The access can come from informal moments between classes when educators share strategies and planning (language schools: participants "A", "B", "H", "I" and "K"), in pedagogical meetings (regular schools: participants "E" and "F") or simply by talking to colleagues and exchanging experiences (self-employed: participants "C", "D", "G", "J" and "L"). This information was gathered mostly from the field notes gathered after the interviews.

All participants view these educators that use mobile devices in class as educators that are not only open to new pedagogical resources but as professionals that can find relevancy in technology at the same time that can dialog with the overall pedagogical goal of their classes and coherent with students' reality and environment. The proficiency in using the device is also brought up, relating to a sort of knowledge that not every educator has. This finding resulted in a contradictory view of the participants since they talk about educators that make optimum use of mobile devices but further during the interview state that they think their peers do not have enough knowledge about mobile affordances. It was not clear if they indeed have access to other educators that make use of mobile devices in ways they assume optimal or they are generalizing what they consider to be such educator.

Participant "F" says that educators that are proficient in the use of mobile devices in their practices "already have the vision of how these technologies are powerful for classes... seeing ways to work that others still cannot". Matters of easily accessing materials and the functionalities that mobile devices can provide were also mentioned.

According to participant "E", educators that use mobile phones for their classes depend heavily on the educational setting in which they act since most schools have policies that are, most of the time, against mobile phones use inside classrooms, mainly because such devices are still considered "tools for distraction".

The view of mobile devices – smartphones in particular – as so-called tools for distraction is shared most prominently by participants "E" and "F" which goes according to the educational setting that they both act (regular schools that have strict policies about mobile phones during classes). The matter of mobile devices as a distraction was also brought up by most participants, but since other participants teach smaller groups or one-on-one classes, the distraction it was only mentioned in passing and not as something that would jeopardize the class.

A deeper relation between second language acquisition educators' identity and mobile devices used for language acquisition was made when participants are asked to reflect about a scenario in which the use of mobile devices for language acquisition is mandatory by the institution they work for and what impact they think it would have in their view of professional identity.

The majority of participants see mandatory policies as depriving educators of the autonomy for planning and creating their classes. Thus, changing the perception they have about themselves as educators and their practices in not particularly welcoming ways.

Participant “A” thinks that a mandatory policy towards the use of mobile devices would change her in ways she would have to rediscover herself as an educator. Participant “A” says:

Because I'm an educator that, in a way, likes to do specific activities, specific materials, and I know how to build my class, to think about my class. I would have to rethink everything by inserting a new resource... So, I would have to learn again how to be an educator.

Participant “B” thinks it is inevitable that some change in her identity would occur. She cannot see anything in specific but points to the socio-historical context in which she sees the educational scenario and that it doesn't matter if it is the educator or student, everybody is affected by mobile technologies. Participant “B” says, “I think that we only need training for it, so we can use this tool in a way that would be relevant from the linguistic point of view.” She complements by saying that ignoring social changes and not to incorporate those changes somehow "is not intelligent".

Participant “H” thinks that a mandatory use of a mobile device would "definitely" affect her perception of educator identity. She relates a mandatory policy about mobile devices as an affront to her values and what she considers as the core of being an educator. Participant “H” states, “(...) In personal values, of what I understand as education, of what I understand of construction of space...”. Later, she continues by saying “it would disturb me, maybe I couldn't handle it... I don't know, it's pretty absurd”.

Participant “H” statement is pretty powerful, but her concern relates more to the fact that she would have to deal with authoritarians' policies than to mobile devices in particular.

Participant “F” sees the mandatory use of mobile as something that she does not look forward to it. She associates the use of mobile to being forced to use her personal device in classes and that

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relates to having to own a different mobile device that she has and the economic burden it would mean. Participant “F” states:

I think that, thinking about me, it would shake a little bit my confidence because they would be forcing me into using a method that I don't feel comfortable using it. Because I don't really know how (to use it), because my device always has a problem, because for me to use it for classes would make me buy a quality device, and I don't want a quality device, I don't want to have to spend money with it.

Participant “L” recognize that having to be obligated to use mobile devices (or anything or that matter) would change his perception of identity, but, like participant “H”, his issue comes from the attitude in which the insertion of mobile devices in class was proposed. Participant “L” says, “I think yes (it would change identity), but I don't think it has to do with the device, it has to do with the relation with the institution, you know.” Participant “C” collaborates to this view by saying “It is the role of the school to instruct educators somehow in a way that would add to their autonomy. I think that if it adds and educators appropriate themselves from it, then there is no problem”. Participant “C” recognizes the changes it would produce, but as good changes once it comes associated to an add-value to her practice.

Participant “J” says it relates to "how" the changes are going to be made. Participant “J” says, “if it is not worked in the right way, sensibilized of what the device represents in classroom, the risk of the educator developing a resistance towards the device is very big” and afterwards complements with how he sees the social and education context he lives in. Participant “J” summarizes his opinion and the possible outcome of mandatory actions in educators' identity by saying:

So, as much as there's this path that is, as I see it, inevitable - because the devices are already here - the way it should be presented is essential, indispensable, it has to be thought and worked in a very careful way, because the worst it could happen is the own educator acquiring a resistance to the device"

Results show that impositions by institutions or schools would generate discomfort among all the participants and, in their view, any mandatory action without a previous debate or pedagogical reason to do so would be harmful not only for the class but could potentially create a situation where educators could jeopardize their practices. But participants also state that after

the initial "shock", that they would be willing to adapt and to reevaluating their practices. This position corroborates their first statement about having a professional identity that is constantly changing by social and professional factors. Participant "D" stated that "somewhere I would be affected. Seeing myself in a context like this I would see myself as a different educator, at least a lot different than what I am now." but participant "D" also says "I think we have to adapt to this new context (mobile technologies) and at the same time have a curiosity in trying to live things in different ways".

### **3.2 SLA and MALL**

Although participants have different strategies and periodicity when it comes to using mobile devices in their classes, all participants claimed to use mobile phones at some point by either promoting activities where students use their devices to search for information on a particular subject (e.g. using an online dictionary to look for the meaning of a word) or by using their own devices to enrich part of the class (e.g. matching images with words).

The results presented in this sub-section are the result of the analysis of the data comprehended in the categories "Relevancy" and "Outside Agents". The analysis showed that educators see mobile devices already being part of students' second language acquisition process since participants view the mobile device as being part of students' lives – either by personally owning a device or by being exposed to it – therefore, they are already receiving some second language input in some way. The participants understand that many of the affordances mobile devices provide, comes in the target language of their classes – in this case, the English language – and "students end up bringing many references of things they have on their devices, without knowing that they have this reference" (Participant "E").

When asked about the role of some devices for SLA, participant "J" says, "Many things that you use in these devices need a second language, and it is only natural for us to work second language through things that are needed for students". This view relates to what SLA educators consider relevant in students' lives to provide context for language acquisition.

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The majority of the participants' view is that students use mobile devices, smartphones in particular, mainly for communicating (social media, instant messaging, e-mail), entertainment (games, apps, music, videos), and information (web search). About students' use of smartphones and the role it can play for SLA classes, Participant "L" says, "The presence of these devices is relevant for the student outside the classroom, so you can bring it naturally for class and becomes relevant because it is part of student's universe".

Participant "E" gives an example of language acquisition happening through digital devices without student awareness of it:

Students always say that (they) know many things because they play videogames. And it is something that they use with another purpose, and for acquisition this is it, right? You have a purpose that you need a tool and you learn this tool because of this purpose. (...) they feel really proud when they recognize a word from a game or app, or that they have seen in a meme, because this is the satisfaction of acquisition. They go, "wow! There is this word on Minecraft! Did you know it?".

Participants are aware that for acquisition to occur, such moments as described above by participant "E" are key since it can fall into the acquisition-learning hypothesis, the input hypothesis and the affective filter hypothesis. Participant "E" continues by saying:

I think that because is a device that we use a lot and it has many games and things that they are interested in, it could put them in contact with the language in this notion of context, use, contact, of making the language meaningful, and that could happen through these devices".

Other participants continued discussing the potential in the appropriation of mobile devices to create such moments and the ability for students to relate the language they acquire outside the classroom being used in class.

According to the participants, students can encounter acquisition opportunities through various 'moments' that their mobile devices provide. These moments can be, as mentioned before, occur through games and apps, but can also be provided by the overall functionalities of the mobile device such as communication with other people, access to different cultures and the potential to gather information on different subjects that could be related to their personal lives as well for school. The educator functions as a monitor when providing meaning and context to what

students encounter in their devices, acting as a facilitator between students and content. Participant “L” talks about being the monitor for this moment and giving meaning to students' repertoire when asked about his views on the use of mobile devices by his students.

Children's repertoire (comes) from the device, and that means a repertoire in other languages. Because if it plays Candy Crush, it is already experiencing another language. Or if it goes on Youtube... what is Facebook? All those words are in another language, the notions are in another language(...) I think it propitiates this 'living' independently of the educator being involved or not. What is good is that the educator can potentiate this 'living'.

Participant “H” sees mobile device adding to class dynamism and content, allowing him to approach the same subject from different angles. Participant “H” says: "so you say one thing and it goes and you reach a point that it makes sense and then you have the thing (mobile phone) ready, the information that is relevant and related to that (the subject) more easily". Participant “H” and other participants share this view of mobile devices having a 'plasticity', being able to 'stretch' and to contextualize subjects in different ways. Participant “D” refers to this plasticity as also the capability for students to interact with the target language:

I think you can create very nice bridges that are very relevant. That allows you to listen to other people talking, you can interact with other people, you can interact with another student in another part of the world. I think it can bring much relevancy to this world that is already connected".

Being able to spot an opportunity for language acquisition and using it relevantly it is another aspect that, in SLA educators' view, mobile devices can be used for SLA. Participant “I” recalls a moment where she spotted an acquisition opportunity and, because she resorted to her smartphone, she was able to provide an acquisition scenario:

Because of that universe (Club Penguin, an online children's multiplayer game) he knew that the octopus sprays black ink when it feels threatened, and I didn't know he was going to tell me that, I couldn't prepare for that moment, there were no books for that or card games, I couldn't prepare for that. But the moment he told me that, I was able to access a video of a real octopus, swimming in a real sea, doing that for real. The access to



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immediate information, the possibility of being affected by what we see at that moment, of not having to... be always prepared. It's to have lightness in your class setup, flexibility. Welcoming a contribution and from that contribution, we can reach other places, and other bits of knowledge really fast.

Another example of acquisition opportunity is given by participant "H" that, because of a conversation with a group of older students during a class about a shooting in a school in the district of Suzano, São Paulo, she was able to provide relevant language input on the spot because she opted to use her smartphone. Participant "H" states:

We were talking recently about the discussion of Suzano, the murderers and killings in that school and then we continued and continued and continued [*sic*], and then a girl started to talk about visibility and what is like to be a garbage man and not to be seen or to be an employee somewhere and not to be seen. Then I remembered a dissertation from a friend from USP (University of São Paulo) that is in English and in the introduction, he talks about visibility. And that was that. I entered (the university website), showed them and it completely made sense.

Although all participants had some interesting points about mobile devices being used for SLA, they also showed worries and concerns about the overuse of the device, the potential in smartphones for distraction, considering students individualities (social and economic) and the importance of contextualizing activities.

According to participant "H" there is a potential for creating new acquisition scenarios that were not possible without the use of the mobile, but not every situation that it creates can be controlled and might disturb what she refers as "quality of presence" and how the class is supposed to have the device having in mind "how to live the process to a specific goal". Participant "H" feels that is easy to fall into overuse of the device and become dependent of it and the dynamics found acquisition must come from a variety of experiences, not only the ones that are now provided by mobile devices.

According to participant "A" is easy for students to get distracted if the use of their devices is not dialogued and contextualized, "students wanted to use my phone to show me something that wasn't related to the class. So, it could distract them a little. They want to put a video or something. (They) ask me to show them something that is not the goal for the class."

Participant “E” and “F” pointed to the fact that different schools have different worries about mobile use. Both participants “E” and “F” teach in what is referred to in this study as regular school, but they have experience in teaching in language schools – private and group classes. Both “E” and “F” have similar concerns about the level of distraction that mobile devices can bring and point to the differences between using the device in group and private classes. About these differences, participant “E” states:

There is a big difference. A private class allows distraction because the person (student) is always referring to you, right? Now, with many students, if you allow this distraction you'll lose some of them. And some will be lost and stay lost.

Participant “F” brings the same issue of distraction in bigger groups of students, she says:

You can't be checking what they are doing all the time. So, they open a screen, and another, and another and then you pass close by and they close it. Or they open a game and start playing and you can't have that control, right? I think it facilitates dispersion."

Participant “F” completes her thought adding:

On the other hand, there is also the idea that distractions have always been present, but in other forms. If they were not on their computers or phones, they were drawing on a notebook and were also distracted. The point here is that there was not a device to make things more evident. I particularly think that there's still facilitation for distraction.

Results concerning the perception and perspective of SLA educators towards mobile devices and MALL showed that the device has potential to be used in classes and could be an add-value when relevancy for acquisition is found aligned to the SLA stage in which students currently are. Relevancy, as participants pointed out, proved to be the most essential aspect to take into consideration when trying to make use of mobile devices for acquisition. Although participants' also showed concerns towards the issue of distraction brought by mobile phones, there's a direct relation to the number of students per class.

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### 3.3 Readiness

The results presented here deal with the perception of educators towards the level of knowledge towards mobile affordabilities that they assume they have and are the outcome of the analysis of the categories “Mandatory Use” and “Practices and Knowledge”. The level of knowledge and familiarity presented is directly related to their practices and how educators make use of the device for SLA.

Educators were asked, “How prepared do you consider yourself to make use of mobile devices and mobile technologies in a way you consider meaningful/rich/significant?”. In other words, how they perceive the level of knowledge that they have about mobile affordabilities related to how ready they think they are to use mobile devices in the way they assume relevant for SLA.

Three participants expressed that they feel “somewhat comfortable” in using the device, all participants related that they see their level of mobile affordabilities as being lower than what they see as the potential in the device for SLA. Participants “A”, “L”, and “J” were the ones that stated that have a level of awareness of mobile capabilities that they consider “somewhat comfortable”, but they also referred to insecurities and doubts about their own repertoire and practices.

Participant “A” considers that she can use her knowledge about mobile devices to enrich her class, but she is aware of other strategies and uses that is not part of her repertoire due to a lack of information on how to use such devices for SLA.

Participant “J” says that he thinks he is more prepared to use the device than other educators because of his background since he studied educational technologies in college, but he still thinks that he uses in a “very limited way” and that he is aware that are other ways of using it. He mentions a need to be sensibilized by the school in order to know what the expectations and the potential for SLA are. Participant “J” says that this understanding is “very limited, even for those that have the understanding”. In this context, the “understanding” participant “J” refers is an academic understanding of educational technologies.

Participant “L”, that also claimed to be comfortable with his level of awareness of mobile capabilities, goes further in his views towards his awareness of mobile capabilities versus his practice. First, he says “I think that there are more interesting proposals that the ones I'm aware”

meaning he is aware of an educational potential, but it does not make part of his repertoire. “L” continues:

We know that if we get a phone or tablet, we are getting them where they like the most [*sic*], you know. And then we show a video or something like that, but I still think that we're not taking advantage of the full potential of the tool. So, we use it because we know we're going to get a reaction because we know of their use, but what are our references to use it? (...) Sometimes I feel nervous because of that. Because I trust what I'm doing, and I think it's been working out, but I feel... I think the best word is 'abandonment'. Of knowing if what I'm doing makes sense with what is best for the children that are under my care.

Participant “L” statement is very powerful because it relates directly to what other educators referred as “using by intuition” or “guessing the use”, a way of using mobile that falls into what they consider their “comfort zone of use”.

Other participants stated their level of awareness of mobile capabilities. Participant “G” states: “I feel 10 % (ready) because I don't think I even use 11% of what it (mobile device) can offer. I think my use is still very basic, but I think it can be explored in several ways that are very nice.”

Participant “D” considers herself a “beginner to intermediate user”. She also mentions that, in her view, she knows what she considers to be “the basic” to interact with this world, but not so familiar with all the possibilities it provides. While participant I, although claiming to use the device frequently in her classes, feels that she is “not ready at all (...) I think that's an aspect that educators need more information about or help and training because sometimes we don't know exactly what device to use”

Participant I statement is similar to participant “K” view when he says “I think there's still a lack of instrumentalization to deal with this (...) I think that when I use these kinds of things I'm trying to... with these technological devices, I guess I'm doing something a little by intuition”

The “lack of instrumentalization” referred by participant “K” was brought up by all participants. Participants relate their practices towards mobile devices as a product of the level of training and dialog about the use of such devices. Participant “H” paints an image of the feeling of not having the dialogs and information needed to use the device with confidence as “jumping

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into the dark". This mention of mention of "jumping into the dark" can also be interpreted as practice influencing identity, since confidence and assurance are intrinsic parts of educators' identity and jeopardizing those could produce an effect in educators' identity. Participant "H" feels that she depends on an understanding of how she can combine the things she has to teach to her capabilities of using the device to make those connections. Participant "H" also mentions that she has doubts and questions about almost every aspect of the use of mobile devices for educational purposes.

Participants were asked to reflect on their colleagues' level of mobile knowledge as well as their views on other educators' practices when it came to mobile use for SLA.

Overall, the result of this question is that most participants feel that their colleagues have the same level of preparation and awareness of mobile capabilities as they have, meaning that they think other educators are not ready to, in their view, make use of the full potential that mobile devices provide.

Participant "E" talks about his impressions towards other educators' use of the device:

I think that, like I said, it has to do with us not being familiar (with the educational potential of the device), but also with the schools that we work for not giving us the incentive for this kind of use, to show us how to use it and ways for us to use it.

Participant "E" continues saying, "as well-intended and competent the educator is, I think there's a lack of repertoire of training for that".

Participant "J" view is that if you just ask educators to use the device they will use it, but the way they know how, which is "superficial, clumsy, towards social media or specific thing that can, sometimes, be related to consumption". In other words, participant "J" thinks that educators are mirroring their personal use and assuming that this way of using the device also has educational value.

Even when some dialog between educator and institution occurs, there are still questions about practices and relevancy for mobile use, especially when applying its use for groups with many students, as participant "F" points out:

(In my school) we're talking a lot about the use of technology. There is a concern, but I still see a lack of objective, of understanding and the use

itself (...) there's still a lack of training about what is it and the pedagogical meaning of the use of these tools.

Participant “F” was the only participant that referred to an actual dialog between educators and institution – in her case, the regular school she works for – contrasting to what participants like H, that state the exact opposite of it. “We don't talk about it, about this apparatus, about how to plan (classes), how to sensibilize myself, others and the students. So, I don't think we are ready (to use)”.

The results show that although educator view themselves and their peers as having a level of awareness of mobile capabilities below what they consider the potential in mobile devices for SLA, initiatives such as dialog between educators and institutions and formal training and information on mobile devices capabilities and affordabilities could be a factor that would produce a greater level of confidence in educators that wish to use mobile devices as pedagogical resources and tools. To use participant “D” words, “what makes them ready or not is the information that they possess and how the school they work for are supporting their practices”.

# 4. Discussion

When reflecting about the reasons behind educators' use or refuse of mobile devices and mobile technologies in order to promote language acquisition, many factors can be interpreted and can vary depending on the context and relevance in which the device is presented.

The discussion that follows is divided into three parts. The first, "finding common ground" tries to understand the attempt to find a common ground between SLA relevance and mobile use affordabilities for learning, taking into consideration educator's personal identities and their perception towards students' use. The second sub-section, "mobile paradox" discuss the paradox between the potential seen in mobile devices for SLA and the actual knowledge for using mobile devices for the purpose of SLA teaching. The final section, "rituals", looks at the practices and how the insertion of such devices can impact educators' identity and practice if schools impose its use without dialog or training.

## 4.1 Finding common ground

After spending the last three months talking to educators and trying to make sense of all the reasons behind the use or refuse of mobile devices for SLA teaching it became clear that I was not alone when I started to wonder about my practice related to mobile devices many years ago.

Educators are constantly trying to balance their personal and professional identities and their views towards mobile devices use and practices, with students' capabilities and autonomy for mobile device use, language acquisition moment, and personal identities. If anything, this balance seems to be weighted by educators' perceptions alone, without previous knowledge on why and how to use the device or the support by the institutions they work for.

SLA teaching depends on the level of autonomy that educators have in order to plan and conduct their classes. They need to understand their students' needs as well as students' motivations and emotional state – following the Affective Filter Hypothesis (Krasen, 1982) – and associate and organize it to the knowledge of where students are when it comes to their acquisition stage. Moreover, they need to plan how to provide students with acquisition opportunities by providing comprehensible input (Krashen, 1982) so the student can move from one stage to the next. For that, they count with their repertoire on pedagogical resources that would be meaningful and attractive for students at the same time.

Relevancy and context are vital when planning activities and moments for language acquisition, but such moments can happen during class without previous planning. It can occur spontaneously and come from students' remarks about anything that relates to their world. Those 'spontaneous moments' are where SLA stands out as effective for children's second language education since it is in those moments that "real" opportunities for SLA appear.

When educators spot relevancy for SLA in students' remarks, they recognize a potential scenario in which they can provide meaningful language input by appropriating themselves from what students provided as cues to help them make connections between life and language. This opportunity to present new language input or  $i+1$ , is directly related to Krashen's Input Hypothesis (1982), where  $i$  is language already known by the student and  $+1$  is new language provided by educator through context. This connection is usually contextualized with the help of pedagogical resources that can range from card games, puppets, and comic books, to videos, books and video games. However, with a plethora of materials and pedagogical resources is hard to always be prepared with the most appropriate resource since those spontaneous moments where students share something of their interest or about their personal lives are, as it says, spontaneous



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and not previously thought of. In a scenario that a student mentions to the educator that he or she saw a bird eating a bug that morning and it is part of students' curriculum to learn about animals or food, educators might see in the student's remark an opportunity to introduce them to an appropriate vocabulary according to what is expected for the student to acquire at that moment. That is when the affordabilities provided by mobile technology and devices come to play and where mobile and the input hypothesis (Krashen, 1982) intertwine.

Even with most SLA educators not being familiar with m-learning theories and frameworks (not to mention MALL), they still make use of the device according to what they perceive as appropriate for their students combined to what their level of awareness of mobile capabilities and knowledge is. If we take the example above where a student share an event of his/her life (animals and food), educators might add "What else do you think birds like to eat?" or "Are birds the only animal that eats bugs or do you think there are other animals that do the same?" or "If birds eat bugs, what do bugs eats?" and so on. For this debate to have actual SLA value, it must be associated with context provided the students' remark, the relevance for the class and by the support of pedagogical resources, but since the remark was spontaneous, there was no way the educator could anticipate what pedagogical resource to use in this situation, so accessing content via mobile device becomes a valid font for contextualization. In the same scenario, educators might use their own device or student device - if he has one at hand or if it considered appropriate – to, for example, search for videos of birds eating food. The social interaction provided by mobile devices aligned to this spontaneous moment, relates to what Crompton (2013) pointed as the two theories m-learning could be associated with: activity theory and the conversation theory.

Mobile use is not just associated with those spontaneous moments, and it could also be planned ahead, giving time for educators to evaluate what is the best resource inside the device for what is their pedagogical goal and if the same offers specific advantages (Kukulka-Hulme, 2013).

Mobile devices affordabilities (Wallace, 2004) and capabilities are still being discovered by many educators that, as they see relevancy for their classes and for their students' acquisition, use the mobile devices even if they consider their perception of knowledge of mobile affordabilities are considered "restricted and poor". Educators are still understanding the capabilities of mobile devices for language learning (Miangah and Nezarat, 2012).

Although the perception that participants have is that their level of understanding of mobile capabilities (digital literacy) is low, that does not stop them to use the device for some activities

since, in their view, the relevance and potential found in the device is enough for them to use it even without having much of a repertoire.

It appears that even without understanding the full potential of mobile devices for language teaching, because of the autonomy educators have to shape their classes and activities in order to promote language acquisition, or to transform their classes according to what students bring to classes, educators are able to associate their personal use of the device and the limited knowledge they have about the affordabilities of the same with the appeal students' see in doing activities mediated through mobile devices. Thus, recognizing the relevancy of using mobile devices in situations that it provides specific advantages (Kukulska-Hulme, 2013).

Figure 6, based on the TPACK framework developed by Koehler & Mishra (2009), how the convergence of technological knowledge, pedagogical knowledge and content knowledge would result in an SLA activity through mobile devices.

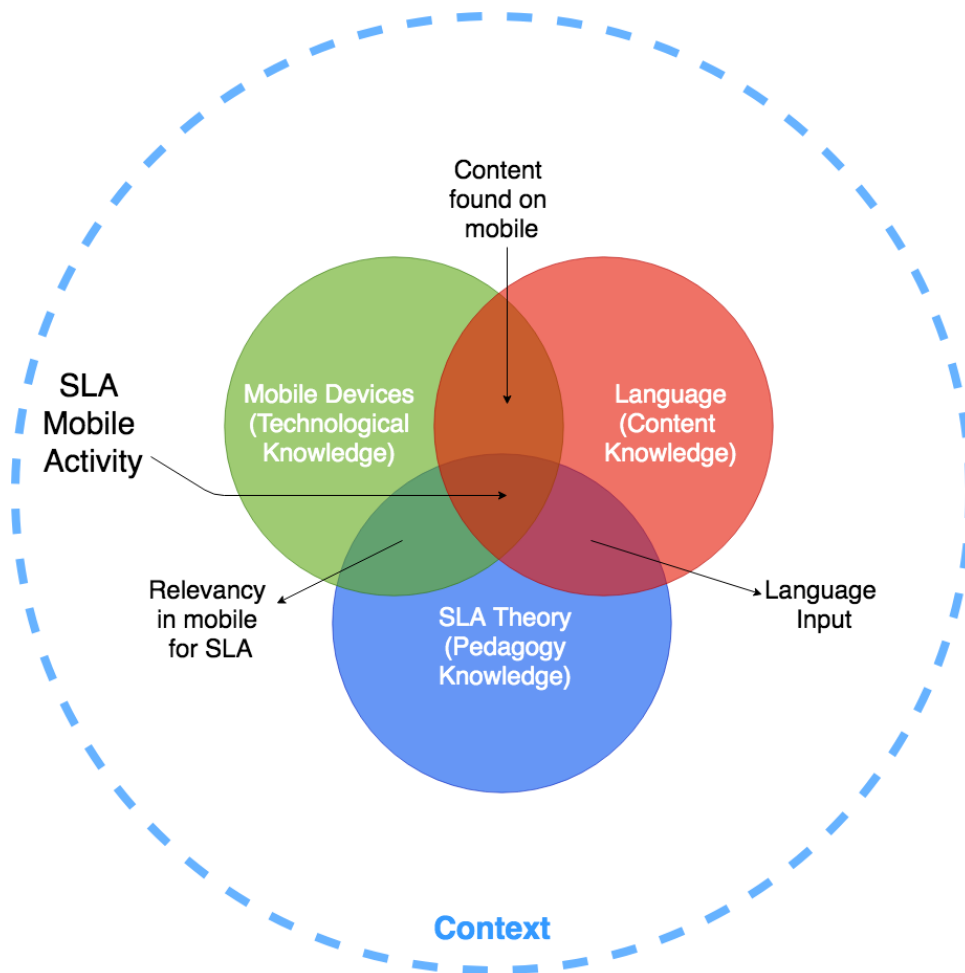


Figure 6. SLA mobile activity based on TPACK framework (Koehler & Mishra, 2009)

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Educators are aware of the potential for distraction that mobile devices can provide (Reinders & Hubbard, 2013), but are also conscious that if preventive measures are taken, students can engage in activities through mobile devices that can not only promote SLA, but also promote interaction and participation (Stockwell & Hubbard, 2013).

Throughout the series interviews made, educators mentioned that there is a lack of discussion when it comes to practices and repercussion of mobile devices in classes, both from the educator part of the use and from the student end as well. The discussion then focusses on if such debates and dialogs would produce different practices on educators and the ramifications that those dialogs would create. Nonetheless, participants described themselves as open to changes and having an identity that is constantly being shaped by social, cultural and professional factors, and showed that they are willing to learn and, therefore, improve their level of knowledge towards mobile devices affordabilities and capabilities so they can reevaluate their practices and re-interpret the importance of adopting mobile devices as another confirmed pedagogical resource.

For the case of educators that act in either regular schools or language schools, the common ground should be achieved by combining the autonomy SLA educators have to choose what, in his/hers view, is the best pedagogical resource to provide the students with opportunities for language acquisition, with an open dialog provided by the schools or institutions they work for. Educators could benefit from this dialog by sharing their practices, experiences and fears at the same time it would gather a deeper understanding of what their peers' experiences are and how it is supported by the institutions they work for.

### 4.2 Mobile Paradox

While the dialog about the best practices for using mobile devices for SLA education is still not present in most of participants' agenda (Kukulska-Hulme, 2009), the use of mobile device is

still happening in a manner that depends on educators' autonomy for using the device the best way they assume it is possible, with the level of knowledge they possess.

All participants mentioned that they do not consider themselves as proficient in mobile technologies and aware of its affordabilities as they would wish they would be, and when asked about what they think about the level of knowledge about affordances and use of their colleagues the answer was the same. Still, they are all using mobile devices at some point in some classes because they see the potential to engage students and to promote interaction (Stockwell & Hubbard, 2013).

This use without knowledge produces a paradox between educators' knowledge of mobile use and what they think they are missing out by not having the amount of knowledge they consider to be available. If in one hand educators are able to associate their knowledge and personal use of mobile with relevancy for students' SLA, on the other it misses on not being able to act on opportunities because of their lack of mobile affordabilities repertoire. The appeal of mobile devices for SLA rests on the fact that it has a plasticity to access different contents and adapt in order to be a part of an activity, if educators are not aware of such possibilities, the device loses many of its advantages. The advantage of using mobile would only become visible when educators have a clear understanding of how the integration of content knowledge, pedagogical knowledge and technological knowledge (Koehler & Mishra, 2009) might be possible.

Educators' repertoire of pedagogical resources comes from different places and sources. It may come from personal experiences and values or professionally developed through training and dialog. In order to provide students with meaningful language input, participants count on their professional and personal repertoires to come up with pedagogical resources that stimulates acquisition opportunities that are able to align context to content. If educators have autonomy to plan and contextualize their classes, their repertoire on pedagogical resources is what dictates which tools are going to help them choosing an activity, so students would make the connection between language (content) and the activity they are doing (context).

Participants considerer mobile devices as pedagogical resources or instrument that would facilitate the bridge between content and context. After talking to participants and understanding how they reach the decision on whether to use mobile devices for SLA activities or not, it seems that in order to make this choice, the path participants take is to, after selecting an specific goal that the student need to achieve, resort to their repertoire on the subject, check if there is relevancy in using mobile devices for such goal and then, depending on their awareness of mobile

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affordances, select how to mobile devices would be used. The image bellow (Fig. 7) demonstrates this path.

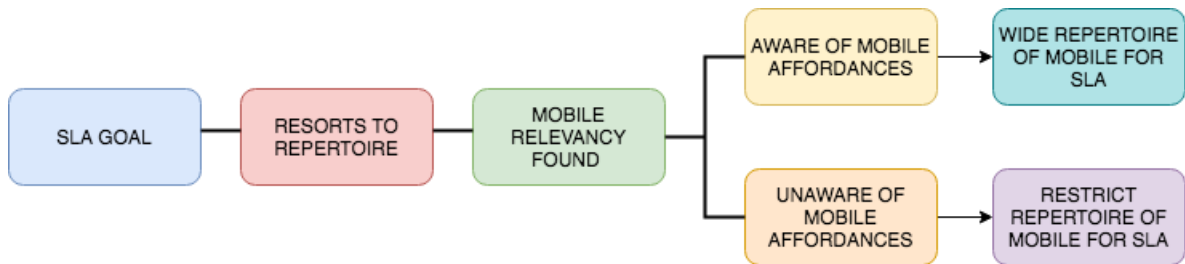


Figure 7. Path for choosing mobile use.

The awareness of the mobile affordances, as described by Wallace (2004), is what differentiates which activity will be proposed to achieve the SLA goal. Awareness of such affordances would allow educators of accessing an umbrella of possibilities found inside mobile devices. Therefore, educators that are aware of mobile devices affordabilities have a wider repertoire of mobile uses for SLA than educators that are not aware of mobile devices affordabilities.

Either way, the autonomy to choose if, why and how mobile devices are going to be use for SLA should lay upon educators' shoulders, after all, the goal is to provide students with SLA input through activities and situations for them to acquire language. The issue is that the lack of repertoire on how to use mobile devices for educational purposes and the act of resorting to a limited repertoire can lead the educator into falling into a use that is either repetitive and "poor" or mirror educators' own personal use of the device.

When participants can find on mobile devices an intersection of relevancy for SLA and knowledge of how the affordabilities found on the device, they can use their autonomy to ponder on whether to use the device or not. But what if the use or not of mobile devices is no longer an option? When participants were asked about mandatory policies by schools and institutions, their response was of concern on whether they would perform at the same level as now and if they were going to receive any support to implement such change.

There is no doubt that participants see mobile devices as an add-value to their practices and for language acquisition, but they also understand that no matter how interesting and powerful the device would be, its potential would not be reached without a previous understanding of its capabilities outside what they understand as their personal use. The fact that a mandatory policy

towards mobile use could be considered would jeopardize – at least temporarily – educators’ practice and identity even in those that are aware of the affordabilities mobile devices have. The fact that their identity has “openness” as one of its traits, does not mean they wouldn’t suffer any impact by imposing them to use a pedagogical resource that are not completely comfortable for using it.

Educators value their autonomy and their capabilities of making decisions when it comes to their classes. The choice of which content to approach, the context needed and, ultimately, which pedagogical resource to use for which moment of class could impact not only on their students’ language acquisition, but the bond between students and educator as well.

Initiatives to promote awareness of mobile affordances is welcomed by all participants that took part in this study, but, in the end, mobile devices in the context it was analyzed are still viewed as one pedagogical resource among many others that could be used for SLA teaching and the option on whether to use mobile devices or not should be autonomously.

### **4.3 Ritualism**

As excited as students might feel about using mobile devices in classes, there are several factors and procedures that must be followed so the use does not become “shallow” and students don’t lose focus or get distracted by other functionalities that the device can provide, especially when there are invited to use their own devices.

Rituals are a vital part for every class, and for the use of mobile devices are even more critical if the goal is to find meaningful ways to provide SLA opportunities. Rituals can comprehend attitudes and behaviors that are expected from students individually as well as a group, it can be used so students have a sense of belonging in the group they are a part of or the order in which certain activities must be followed.

All participants related that the reception by the students whenever an activity using mobile devices is proposed – could be on educators’, or school’s or own students’ mobile devices – is usually very well received and students feel very excited about it. A participant even used the

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word “ecstasy” to describe the feeling that students have when they are allowed to use their phones during a class. “It’s like you are telling them ‘this is not class’”.

Because mobile devices can be a very personal object (McQuiggan, Kosturko, McQuiggan & Sabourin, 2015), participants consider to be easy for students to be immersed in their own world and what it was supposed to be an inclusive activity ends up becoming an individual moment. So, educators feel the need not to just explain the activity itself, but also to make sure that a ritual involving the device must occur. There is no fixed way to create those rituals, but it is important that students understand what is expected from them.

Rituals also vary between classes and number of students. For instance, in a one-on-one class, educator can set as a ritual that every class the student can share something of his/her interest using the phone or that they have a limit for mobile use in each class. For groups, it can be used for taking pictures of moments in which the group is acting together or that they can share relevant content through a message. Rituals are essential not just to set “rules” about the use of the device, but also to establish the bases in which the group act towards the device inside the classroom. Figure 8 illustrates how a ritual can interfere in group dynamics, so students would act cooperatively.

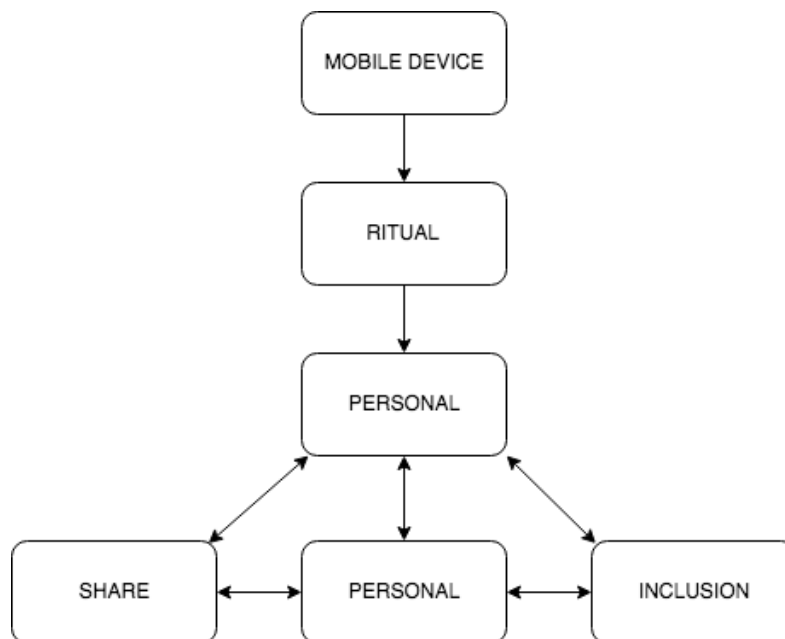


Figure 8. Ritual for mobile and group inclusion.

Rituals for mobile use would not take away the spontaneous moments of class in which a simple remark can lead to the use of mobile devices to expand acquisition. By establishing rituals of use for mobile devices inside the classroom and for educational purposes, educators would provide students with a possibility for them to reevaluate their use and their knowledge about their own devices.

The rituals orbiting around mobile phones and other mobile devices are still being explored by educators, but it follows the same principles as the rituals that are used in other activities or for the use of other pedagogical resources - such as books or games - in order to create an ideal situation for SLA that educators feel appropriate and enjoyable for students.



## 5. Conclusion

In this chapter, I present the conclusion of this study, the limitations about the research and what future studies that wish to continue this work or to use it as support material should consider. I also deliver my final thoughts on the study and my future plans after reaching the end of this journey.

### 5.1 Conclusion

This study presented a panorama on the perspectives of educators on mobile devices and its use for second language acquisition by looking at their own perception of identity and practice.

The conclusions are that, first, educators perceive mobile devices as a pedagogical resource with great potential for SLA when used appropriately and most important, in relevant situations where it shows advantages to provide language input to students. Educators are making use of the mobile technologies and mobile devices in class for the relevance they see in using the device for activities, to make tasks more appealing for students, for the convenience found in already owning a mobile device that can be used both for personal and professional reasons and for being capable of accessing relevant material on the spot when acquisition opportunities are presented without having to previously prepare themselves for a possible opportunity. This discovery does not mean that educators are aware or mobile affordabilities or that they are familiar with concepts of m-learning or MALL, only that the fact that not being aware or such affordabilities and concepts do not impede them to approach the device as a pedagogical resource and use it as it seems fit according to their perceptions.

Second, the participants do not feel that their identities are being jeopardized by the integration of mobile devices in classrooms. Educators perceive that those that work with SLA and education in general, are in constant change, being moved by social, economic, cultural, and technological factors. They assume that being open to changes is part of makes them educators. They embrace those changes as part of their professional identities as long as they can still maintain their autonomy to choose the pedagogical resources and tools are better suited for their classes and students. However, they do see an unwanted shift in their practices and perception of identity if the insertion of mobile devices (or any unfamiliar pedagogical resource for that matter) when forced upon them by authoritarian policies from the educational setting they act upon. If schools or institutions propose a mandatory use of mobile devices, then educators see themselves as dealing with an unknown that could put at risk, even if momentarily, the quality of their classes, the acquisition that they provide for their students and their overall view of themselves as educators and their professional identities. Any policy that would affect educators' identity or practice should be followed by dialog and training.

Third, educators are willing to dialog about methodologies and practices of using mobile devices. The educators that took part in this study all have said that their perception of awareness of mobile affordances – as well as their peers – is low compared to their perspective on how valuable for SLA mobile devices can be. Much of educators' confidence in their capabilities comes from the autonomy they have to choose the pedagogical resource that better suits their style and their students' needs, both cognitively and affectively. The confidence referred comes from educators' repertoire of pedagogical resources, but for this repertoire was first built on the bases of proper training, dialog through an open channel between institutions and educators, familiarity with the resource and practical scenarios.

It is my understanding that SLA educators make use of every resource at their disposal to expand students' vocabulary (i+1) by immersing students in situations where the language presented can be acquired by associating relevant moment (context) to target goal (language) through appropriate means (pedagogical resource). Since mobile devices have a strong presence in today's classroom and learning environment relevant for SLA, thus, it is fair to consider it as another pedagogical resource for SLA. Moreover, SLA and MALL could be merged into a new category that combines the two theories into a new field of studies in m-learning. In doing so it could generate a hypothesis of a mobile-assisted language acquisition theory or MALA theory, capable of reaching a more profound understanding of how mobile devices affordabilities and impact for SLA. MALA could be a promising field of m-learning and it deserves to be further and thoroughly explored. MALA not only comprehend the studies of MALL and its

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characteristics but would focus on the aspects that make mobile devices attractive to SLA and, by doing so, providing those that teach second language with the much-needed understanding of its value to language acquisition, especially if associated with inclusive measures of support by schools and institutions.

### 5.2 Limitations and future work

The use of grounded theory as a method to gather and interpret the data necessary for this conclusion was vital for making sense of all the opinions, views, concerns and remarks that all twelve educators so vividly exposed, but some criticism towards to how this method was used has to be mentioned. First, the schedule presented as requirement for completion of this masters asked for the literature review, research questions and research goal to be delivered before the actual research, but, as ground theory scholars state, questions and goals come from the data and not the other way around, and the same can be said about the literature review. Once data starts to arise, so does the questions and the need to search in literature what authors, researchers, and scholars have to say about the topic. It is my personal feeling that once I started to collect the data necessary for the first steps of analysis I started to wonder if I was not missing on the opportunity to look in depth to other possible factors other than the ones I had previously thought about. Another downside of choosing grounded theory was the time I had versus the time I needed to thoroughly look at all the hundreds of pages of data I collected over the past four months or so. As I mentioned before, grounded theory is a very time-consuming research method, but one that is very enjoyable and deserves to be done properly.

Another aspect that brought my attention is that all participants were referred as ‘educators’ through the interviews, but some are now in a professional moment where they see themselves shifting to educational scenarios where they are referred as ‘teachers’. This bring the question of if the perceptions gathered here would be different if participants were treated as teachers instead of educators. This difference would make an interesting point and should be further explored.

Although many other topics such as students’ parents views and role in mobile use for SLA, if and what kind of support educators are receiving to use mobile devices (e.g., mobile devices

provided by the school), their view on language education versus other disciplines education (e.g., science, math, history), and their take on the personal relationship and use of mobile phones by their students were approached during the interviews, I had to leave this data aside in order to focus on answering the research questions first proposed.

Some other aspects of this research that brought my attention and should be considered if future works would wish to expand the views presented here are:

- How can mobile devices be used to enhance the affective filter (Krashen, 1983) and promote student-educator bonding?
- An effective initiative to measure the outcome of MALL in SLA classes.
- Can the results found in this study be replicated using SLA and mobile devices for older students?
- Would the results of this study be the same if participants identified as ‘teachers’ instead of ‘educators’?
- Is it possible to create a framework for the rituals of using mobile devices in class, and how can those rituals of the use of mobile devices in class be further explored?
- How can the MALA hypothesis be further explored?

### **5.3 Final thoughts**

Grounded theory is as enjoyable as it is time-consuming, still, I am glad I chose it as the research method for this work for no other qualitative research method would allow me to look at the results with such wonder and motivation to write about.

The subject of educators’ identity and practice it is, by itself, broad enough so that many different views and studies can be used in order to paint a bigger picture of what is that makes them motivated to pursue different tools to enrich their profession as well as their personal development.

Mobile technologies are only getting more present in the educational scenario, and I am glad that could contribute to a study that has a purpose of trying to discover how educators are fitting in this somewhat new age.

## **Conclusion**

I look forward to continuing to explore and further develop the proposed MALA hypothesis in a Ph.D. in educational technologies and to continue to contribute to a more prosperous and more inclusive educational landscape.

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