BENEMÉRITA UNIVERSIDAD AUTÓNOMA DE PUEBLA

Facultad de Lenguas

Maestría en la Enseñanza del Inglés

The new culture of teaching: the impact of the iPad in English language teachers' cognition

A Thesis Submitted to the Faculty of Languages for the Degree of

Maestría en la Enseñanza del Inglés

Héctor Rubén Luna Martínez

Thesis director:

Dra. Rebeca Elena Tapia Carlín

Puebla, Pue. **November, 2021**

The new culture of teaching: the impact of the iPad in English language teachers' cognition

This investigation has been read by the members of the Committee of

Dr. Rebeca Elena Tapia Carlín

And is considered worthy of approval in partial fulfillment of requirements for the degree of

MAESTRÍA EN LA ENSEÑANZA DEL INGLÉS

Thesis Director	Committee Member
_____	_____
Dr. Rebeca Elena Tapia Carlín	Dr. María del Carmen Castillo Salazar
Committee Member	Committee Member
_____	_____
Dr. Eliphelet Rivera Cuayahuitl	M.C. Leonor Juárez García

Benemérita Universidad Autónoma de Puebla

November 2021

The new culture of teaching: the impact of the iPad in English language teachers' cognition

ABSTRACT

The context of the research was in a private primary school in Pachuca, Hidalgo, Mexico. The current research project aims to explore teachers' cognition, more specifically into the teaching practice and emotional responses that English language teachers in the elementary level report when implementing the use of the iPad in their lessons. Four female English teachers were selected to be part of the current research project. A grounded theory method was selected to carry out the study and two instruments were chosen to collect and triangulate the data obtained, such instruments are guided teachers' narratives and individual interviews. Results show that teachers' practices and emotional responses evolve during the process of iPad implementation by following four main stages: initial reactions, sense of realization, change, and adaptation. Furthermore, similar emotional reactions and teaching practices were found in the four participants. Finally, all the participants agreed that the implementation of the iPad changed somehow the dynamic of their lessons as well as the way they used to teach.

Key concepts: iPad, technology, cognition, new culture of teaching, teachers' cognition

ACKNOWLEDGMENTS

I would like to thank all the people that contributed in the development of this research. Their contribution was extremely useful to carry out the current project. First of all, I express my profound gratitude to my thesis director Rebeca Elena Tapia Carlín who always supported and guided my ideas and passion about research. She has been an excellent role of how a professional must look like. My special thanks and gratitude to my readers Dr. María del Carmen Castillo Salazar, Dr. Eliphelet Rivera Cuayahuitl, and M.C. Leonor Juárez García for their time, their valuable feedback and advice. I also thank Dr. Witten and all the MEI professors who shared their knowledge with us. I would like to thank the four participants and the institution where I carried out my study. I appreciate that they allow me to learn from their valuable experience. I would like to thank my family who always supported my decision to study a master's degree in ELT, my friends who always listened and give their opinions about my research, and to my beloved who always accompanied me through this journey.

TABLE OF CONTENTS

CHAPTER I: INTRODUCTION

1.0 Introduction

The current study proposes to explore teachers' cognition regarding the effects that the implementation of the use of the iPad has had in elementary English language teachers' teaching practice as well as to explore their emotional responses to this innovation. According to Galván and López (2017), one of the biggest problems when trying to implement new technologies in education is the attitudes that teachers have towards them. In addition, some of the biggest obstacles found in this field is teachers' fear of expressing opinions about the new technologies or acknowledging how they really use them in the classroom. As Galván and López (2017) point out, some teachers do not report their truthful practices when using technology because in many cases acknowledging that they do not use them or that they do not possess the necessary training may be politically incorrect. As such, this situation could lead to a conflict between what teachers really believe about new technologies and what they believe society demands (McGinty, 2002, as cited in Galván and López, 2017).

However, during the past years, technology has been integrating into homes around the world and with this into all facets of peoples' lives including English language teaching (Ahmad, 2012). Moreover, the integration of technology is not new since it has been happening since 1950 when small language schools introduced the phonograph, movies, and the tape recorder as tools in English language teaching (Ahmad, 2012). According to Ahmad (2012) in the modern era other electronic resources have been implemented such as video, pictures, interactive games, CDs or DVDs, the use of internet, chat rooms, video

conferencing and Apple's iPad. Such resources have reduced distances between societies and turned the whole world into a global community.

iPads have been widely adopted around the world in the educational setting, making them one of the most popular devices implemented in schools worldwide (Zhang and Nouri, 2018). Mexico is not the exception and private schools in the country are starting to utilize the iPad. The iPad is a tablet which combines smartphone features like a computer, providing access to information and applications. The useful gadget is a comfortable size and weight and opens the door to more than 65,000 educational apps (Lezama, 2014). Nevertheless, the new technologies implemented may not have a real impact on the teaching learning process until there are significant changes among all the members of the educational organization, from a micro level (pedagogical) to a macro level (structure of the current educative system) (Galván and López, 2017).

1.1 Purpose of the Study

This study looks for defining what was the culture of teaching before teachers worked with iPads vs what might be considered the new culture of teaching after implementing its use in their classes by focusing on the specific participants and the specific context of the study. Furthermore, it provides insights into teachers' cognition, more specifically into the teaching practices and emotional responses that English language teachers in elementary level report when implementing the use of the iPad in their lessons. Teachers' cognition involves what teachers think, know and believe (Borg, 2003); however, this is only a broad concept, new concepts include the emotional dimension of teachers' lives (Borg, 2019). Therefore, the current study explores how teachers' cognition (think, know, believe, and feel) is affected by the implementation of the iPad and how it is reflected in their

teaching practice. Such insights may be helpful to approach problems that have arisen, for instance several researchers study the possible reasons for the lack of impact of ICT in improving educational results (Somekh, 2004), the different aspects which could be influential include self-efficiency of teaches' own computer skills (Paraskeva, Bouta & Papagianni, 2008) or how emotions play an essential role when accepting the implementation of computers (Veen & Sleegers, 2006).

1.2 Rationale of the rresearch

Electronic resources such as iPads may offer benefits when implementing them in the educational context. Additionally, they may change the way teachers develop their lessons. Considering the ubiquity of such tools in modern society, investigating how teachers respond to the implementation of iPads is an important step in ensuring their optimal use. This study fits into this general area of innovation that various authors (Galván & López, 2017; Lezama, 2014; McGinty, 2002) claim is important. Other work has been done in this area (Lezama, 2014; Galván & López, 2017; Cai, 2012; Kayapinar, Erik & Kose, 2019; Öztürk, 2018; Zhang & Nouri, 2018) but never in a private school in central Mexico. Furthermore, this study will contribute to previous work because it mainly focuses on the use of a specific tablet, the iPad. The study also combines the teachers' practices and emotional responses. Prior research, for instance, the work of Öztürk (2018) researches about the Turkish Language Teachers' anxiety about tablet PC assisted teaching where it was found that Turkish female teachers' anxiety level arises when teaching with tablet PC. In addition, the research suggests that teachers should be provided with adequate training in using tablet PCs. Moreover, the current study attempts to research the culture of the classroom that five experienced teachers had before and after the implementation of the iPad in a private institute

in Pachuca, Hgo. Therefore, this study attempts to be significant for both novice teachers and in-service teachers, as well as, higher administrations which regulate the English language teaching in Mexico due to the fact that by exploring the culture of the classroom, awareness can be arise on the need to have a better understanding of what really happens in our language classroom (Herrera, 2014).

1.3 Research Questions

This research addresses the following research questions:

1. How has the implementation of iPads in an English as a Foreign Language Class influenced the teaching practice of teachers in elementary level of a private elementary school in Pachuca Hidalgo?

2. What changes have been provoked in regard to teachers' emotional responses as a result of the implementation of iPads in the previously mentioned context?

3. How has the implementation of the iPad influenced English language teachers' cognition?

1.4 Conclusion

This chapter introduced the aims of the investigation in examining teachers' cognition towards the use of the iPad in their classes, exploring what effects are expressed by teachers in their teaching practice. It explains the purpose of the present study as well as the rationale. Moreover, the context and objects of the investigations were presented and the related research questions were set out. Chapter two provides the theoretical framework related to this research project. Chapter three thoroughly details the methodology employed to analyze all the elements involved in the data sample. The participants/objects of the study will be also

described. Chapter four presents the data analysis as well as the results. Finally, chapter five shows the conclusions, contributions, and limitations of the present investigation.

CHAPTER II: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature associated to he main areas of interest in this study and directly related to the research questions. These areas are firstly, old teaching culture and new teaching culture; second, technology to teach a language, more specifically the use of the iPad in an EFL classroom; third, language teacher cognition regarding the use of the iPad.

The first section identifies the literature that explores generally about classroom culture, then it defines and distinguishes old culture of teaching from new culture of teaching; finally, it provides insights in previous research about new culture of teaching.

The second section presents a broad approach to technology to teach a language, which then is narrowed to the role that ICT plays in the language classroom and the role of the iPad when teaching a language; finally, previous research on the use of the iPad to teach a language is provided.

In the third section, language teacher's cognition is defined by first defining cognition as a whole, then defining teacher's cognition, and finally what is language teacher's cognition. Moreover, teachers' cognition towards the use of technology and previous research on teachers' cognition and attitudes regarding the use of the iPad in language teaching are reviewed.

A new culture of teaching is then considered a culture where students are most of the time participative and collaborate with the teacher to construct the class; additionally,

teachers promote the use of technology so that learning not only takes place in the classroom, but it is present everywhere.

2.1 Classroom Culture

Before analyzing classroom culture, a brief review of what culture means for several authors will be provided. Firstly, cultural anthropologists (Hudson, 1998; Nieto 2002) have defined culture as the set of characteristics that certain groups of people have in common within their community and are distinguished from others. However, Nieto (2002) states that these characteristics are ever changing and depend on the geographical location, language, social class, and/or religion, additionally he mentions that such factors are transformed by the ones who practice them. The US Department of Health and Human Services Office of Minority Health (2000) also defines culture as features that are part of human behavior such as language, thoughts, communication, actions, customs, beliefs, values, and institutions of racial, ethnic, religious or social groups. Furthermore, Leinninger (1985) adds that these features are transmitted from generation to generation and influence one's thinking and action modes. Taking into account the above mentioned, it can be said that culture is a complex interaction which is in constant evolution and several factors influenced it such as social, political, historical, and contextual.

Classrooms are seen as small cultures where the main environment is education, different cultures overlap and take place at the same time here, Holliday suggests that there are cultures of any size and that there can be either temporary cultures for specific activities or permanent ones (in Herrera, 2014). This circumstance that concerns the classroom culture is explained by Holliday (1999) and Pratt (1991).

As stated before, small cultures are introduced by Holliday (1999) who mentions that people have the particularity of being part of small cultures that differs from the ones that they already belong to, moreover he claims that these "small cultures" can be found in the classrooms which are not neutral locations and complex. In addition, Pratt (1991) indicates that there are places where cultures meet and conflict with each other, for Herrera (2014) "in the educational field these places are the classrooms" (p. 9). Language Teacher Education is conceived as "a complex small culture with overlapping personal agendas and course agendas" (Singh and Richard, 2006, as cited in Herrera, 2014, p. 9). Such agendas integrate five features which are: Teacher-learner own perceptions of how to learn, teachers-learners' personal agendas, course aim and agendas, trainers own beliefs, institutional, country, professional-academic and course specific cultures.

To sum up, culture is seen as an ever-changing human process where several factors such as beliefs, language, thoughts, and values interact with each other constantly. Culture can be found in "mini versions" everywhere but in the educational field, the classroom is a good example of it. In this specific context, teachers and students collaborate by meeting and conflicting to construct their own classroom culture.

2.1.1 Towards a definition of classroom culture

Zhu and Li (2020) defined classroom culture as a mixed organizational platform which combines student-student interactions as well as teacher-student interaction, some other features are included, such as collaborative and group learning. Additionally, the selection and use of software and materials are essential components that integrate a classroom culture. The role of the teacher in understanding external pressures, like exam requirements, the pedagogy, constructed conceptual development, and cognitive language

are factors that influence the culture of the classroom (Zhu and Li, 2020). In addition, Canagarajah (2001) claims that "the classroom is a site of diverse discourses and cultures represented by the varying background of teachers and students" (p. 209). As mentioned in the last section, classroom culture includes all the factors that are stated by Canagarajah (2001) and Zhu and Li (2020) where teachers and students are active participants with different cultural backgrounds in the construction of a classroom culture.

Herrera (2014) based on Breen (2001) proposes to explore eight essential features as characteristics of classroom culture in order to define it. These features are: the culture of the classroom is interactive, highly normative, asymmetrical, inherently conservative, jointly constructed, and immediately significant.

As the first characteristic mentioned is that the culture of the classroom is interactive, Breen (2001) claims that this is highly motivated because students are able to learn from each other in the group. Furthermore, Herrera (2014, p.11) state that "Individuals construct their learning through interacting to each other which can be verbal or non-verbal; as a result, misunderstandings, alternative interpretations, and negotiable meaning will paradoxically be the norm." Additionally, by assuming that the classroom is an interactive field, students might have several aspects in common due to they belong to the same group. Nevertheless, not all students will share the same points of view which might lead to disagreement, frustration and conflict within the group. This phenomenon is caused because the language classroom is the place where different students' realities take place, for instance students might differ about learning styles or learning purposes (Breen, 2001; Herrera, 2014). However, these differences should be seen as a positive feature instead of a negative one, by explaining to students that everybody is different and learns differently from others (Breen,

2001). Moreover, Herrera (2014) explains that the tension between the internal world of the students and the social world of the group is a representation of the culture of the classroom which is called “collective” where the group influences the student and the group has characteristics of the students, equally teachers are also influenced when interacting with the members in the classroom.

The following characteristic is called the culture of the classroom is highly normative, which concerns not only the language classroom but also, to all kinds of classrooms. This feature involves all the judgments that students and teachers, as members of the classroom, experience (Herrera, 2014). Breen (2001) sees the language classroom as a highly normative and evaluative environment where the teacher is only focused on judging students, seeing them less as persons, but people who are supposed to learn by a person who is supposed to teach. Regarding this matter, classrooms have been seen as places where students judge their teacher’s performance by having different expectations, beliefs, and attitudes towards that member, they also judge their classmates' performance as language learners, which it is why is relevant to know the interpretation of the whole group and the individual interpretation of the students (Herrera, 2014).

“The culture of the class insists upon asymmetrical relationships” (Breen, 2001, p.131). Such relationships exist between teachers and students but also among students. These asymmetrical relationships might exist due to the teacher being conceived as the authority in the classroom giving him/her more power within the classroom. Likewise, asymmetrical relationships are perceived among students, and it can exist due to economical position, age, and gender (Herrera, 2014).

The next feature is that classroom culture is inherently conservative which involves the fact that there must be a resistance towards new ideas or innovations. As Breen (2001) claims that any innovation within the classroom may be resisted by their members due to a genuine culture is in constant harmony where changes are slowly absorbed in order to be accepted.

Breen (2001) states that the culture of the classroom is jointly constructed where the importance of how, together, students construct knowledge is raised. This is because most of the students or all of them collaborate with each other in order to construct the lessons. Thus, it can be said that the lesson planning is likely to change from lesson to lesson even though it was previously anticipated. "This means that the lesson will be different from the plan or anticipation made by the teacher and also by the individuals because the classroom group is the one who jointly constructs the lesson-in-process" (Herrera, 2014, p. 21).

The final feature of the culture of the classroom is that it is immediately significant which according to Breen (2001) refers to what is significant to learners and teachers is not their individual thinking or behavior, but the day-to-day interpersonal rationalization of what is to be done, why, and how. "Therefore, it is this interplay between the individual and the group that represents what Breen (2001) proposes as the culture of the language classroom, "the social and psychological nexus" (Herrera, 2014, p.22). Furthermore, Singh and Richards, (2006) in their article Teaching and learning in the Language Teacher Education Course Room: a critical Sociocultural perspective, assert that "the language teacher education classroom is viewed as having rich life which unfolds over time, as events and processes interact, and shape the way participants think, feel and act" (p. 3). Singh and Richards (2006) also claim that the interaction between teachers and students mold the process of learning,

which is seen as a situated social practice, induction to a community of practice, development of a new identity, acquiring a professional discourse, and developing a theory of pedagogy.

To conclude, Zhu and Li (2020) provide a general and concise definition of what classroom culture is, it is the place where all the members coexist and base their culture on the similarities and differences among students and teachers in order to achieve learning purposes. On the other hand, Bree (2001) and Herrera (2014) extend the topic of the culture of the classroom by giving eight features which describe and define in a more specific way this matter. The eight features are favorable insights in order to explore more what classroom culture is.

2.1.2 Old culture of teaching vs New culture of teaching

The culture of the classroom was analyzed, defined, and discussed in the previous section; thus, it could be reflected that both students and teachers play an important role in the creation of the classroom culture. This section focuses on the teacher and how the culture of teaching has been modified throughout the years leading it to change the culture of the classroom.

Feiman-Nemser and Floden (1986) state that the teaching culture refers to the beliefs and knowledge that teachers share regarding their work. Such beliefs are about "appropriate ways of acting on the job and rewarding aspects of teaching, and knowledge that enable teachers to do their work" (p.508). Nesbit (2000) claims that even if teachers do not recognize the nature of what they teach, "they are capable of having preferences, beliefs, and values with respect to what to teach and how to teach it" (p.1). Nevertheless, sometimes teachers appeal to other teachers, thus their teaching practice is circumscribed by social conditions

which ideas are manifested in the classroom (Nesbit, 2000). The culture of teaching is not something that is chosen individually but it is based on the tradition from the beliefs, values, habits, and assumed ways of doing things among teachers communities (Hargreaves, 1994, as cited in Nesbit, 2000).

Posch (1994) describes the elements of a culture of teaching and learning in his era, before the 21st century. These elements are described as old and prejudicial for the future due to the old cultures of teaching and learning were attuned to a relatively static society where text books, tests, the amount of knowledge, competences, and values were prioritized. "Schools are expected to prepare the majority of children and young people to meet satisfactorily the demands others have defined for them" (p. 157). The element of this "old culture of teaching" are listed below:

- Priority is given to systematic knowledge, well-established facts, focused on results of academic knowledge production. Low priority is given to open and controversial areas of knowledge and to personal experience and involvement.
- Teaching and learning have a clear and predictable structure while complex, real-life situations tend to be disregarded because they cross the disciplinary boundaries.
- A transmission-mode of teaching. This mode facilitates the retention of the systematic character of knowledge and its reconstruction by the student. It tends to discourage the generation and reflective handling of knowledge.
- A prevalence of top-down communication. This facilitates the external control of pre-defined knowledge structures, provides stable frame conditions, and facilitates the maintenance of control in the classroom. However, it

discourages self-control and cooperation among students (or teachers) and networking within and across school boundaries.

Based on the last features Posch (1994) suggests that in order to make a new and better culture of teaching, it is necessary to make changes that show the opposite of what "old culture" is. Moreover, he states that the strengths of static elements must be retained and complement them with dynamic ones, allowing the balance of the two, so schools can find answers to the social changes. These features fit in the student-centered approach which Monyai (2019) claims that teachers in the 21st century should apply in order to develop students' self-confidence by actively involving them in knowledge production and learning.

The implementation of technologies in the classroom provokes that teacher re-consider their beliefs, values, and habits in how they develop and perform their lessons. In other words, the more teachers use technology the more likely they are to change their teaching culture and start creating a new one. Geer et al. (2015) claim that "with the use of new technologies in the classroom comes the need to modify current pedagogical approaches" (p. 2). They also highlight the fact that by bringing new technologies student-centered pedagogies emerged, therefore this pedagogy is seen as a fresh one which affords new opportunities for learning. Furthermore, Geer et al (2015) consider that when using more technology, teachers are more likely to perform a bigger collaboration as co-learners and pioneers with their students and that student-centered pedagogical approaches are easily applied by the use of digital tools. Thomas and Brown (2011) also believe that technology in the 21st century is changing the way teachers teach and students learn because they claim that this kind of learning is not taking place in the classroom but is all around us, everywhere, and it is powerful.

2.1.3 Previous research on new culture of teaching

In order to talk about the new culture of teaching, a review of the old practices towards the new ones will be presented in a geographical sequence. Firstly, the topic will be developed from teacher-directed practices to student-directed approaches, since the first practices were the most common in the past before the approaches focused on students became popular in the educational field.

Around the world were applied different educational theories during the 20th century. The united states of America was characterized for the implementation of behaviorism in schools, Germany worked with its reform pedagogy and the gestalt psychology in western Europe. Furthermore, theories of learning such as instructionist and constructivist have emerged, which influenced the way to perceive education out of the United States and western Europe (Fischer, He, and Klieme, 2020). The two dominant frameworks established the basis for the development and application of teacher practices. On one hand, instructionist was characterized for being traditional and teacher-directed, and on the other hand, constructivist (Vygotsky, 1978; Dewey, 1929; Piaget, 1952) was the alternative approach by focusing learning on the student and on the context.

Fischer et al (2020) mention that teacher-directed and student-centered practices are relatively old from decades ago. However, they state that one recent addition to the educational field and teaching practice is classroom assessment which "is considered one of the most powerful teaching practices for quality management and the improvement of student learning outcomes" (p.2). "Echazarra et al. (2016, as cited in Fischer et al, 2020) mentioned that

> "classroom assessment can be placed between both traditional (teacher-directed) and modern (student-centred) ends of a teaching practice scale, yet there is rarely empirical evidence supporting this classification. Moreover, as assessment practices have to be applied by teachers with either teacher-directed or student-centred approaches in order to identify the students' learning state and progress, the question remains if and how different assessment practices are incorporated into different approaches to teaching".

Instructionist and constructivist approaches flourished and mainly proved in western countries (Europe and North America), which make them hard to adapt or adopt to other cultures in the world (Fischer et al, 2020). Besides, policy-makers worldwide are aware of the importance that high-quality teaching has in their countries. however, it is likely that "they have a different understanding of the structure of teaching practices and the notions of good practices" (ibid, p.2). A survey was conducted around the world by Praetorius and colleagues (2018, as cited in Fischer et al, 2020) in order to know more about the notion of these good practices. It was found that South-American countries prefer practices where deep thinking, students' autonomy, and adaptive teaching are prioritized. East Asian countries, on the other hand, showed preference to well-structured lessons and independent thinking, while German researchers claim that defined feedback, addressing students' errors, orderly managing the class, cognitive activation, and social-emotional support are the features which characterize the practices in their country.

Approaches to instructions and co-occurrence of teaching might be different across countries due to the wide difference among cultures which is clearly seen in Fuller and Clarke (1994) work, where countries with a power distance value might disagree with student-

centered practices because it promotes an active engagement of student during instructions and these countries do not tolerate that. Additionally, McCormick and Alavi (2004) claimed that collectivist countries would not prefer practices promoting teachers' critical reflection and inquiry due to criticism is communicated more indirectly than in Western countries.

As a whole, teacher-direct and student-centered approaches might be seen as the past and the present of modern styles of teaching and learning. While teacher-direct may be considered "old culture of teaching" due to the features that characterized it such as individualism and top- down communication (Posch, 1994); currently, student-centered is the most adopted approach, at least in south American and western Europe countries (Fischer et al, 2020), thus in this part of the world may be seen as the new culture of teaching.

2.2 Technology to teach a language

The use of technology has rapidly increased during the last few years, nowadays students are demanding that technology must be incorporated into the language classroom, however; teachers are the ones who are unsure of whether to implement it or not even when they know their students' demands. This is because in the past teachers use little or no technology, so current teachers feel less capable of using technology than their own students, thus they are unaware of the tremendous potential that the use of technology has when implementing it to teach (Marek and Wu, 2019). Some of the terms that have emerged with the incorporation of technology in the classroom are computer-assisted language learning (CALL), mobile-assisted language learning (MALL), and technology-enhanced language learning (TELL). According to Marek and Wu (2019) such terms are still unknown by a large number of teachers that are trying to incorporate new technologies in their lessons. Nevertheless, technology plays an essential role in the lesson plan, used for student learning

activities due to it supports such activities. Therefore, technology must be seen as a complement of the lesson activities and not as an activity of itself (Marek and Wu, 2019). Furthermore, it is important to remember that when attempting to create a technology-rich environment the goal is not only use more technology, but "to improve learning by using technology to enhance learning activities and thus result in outcomes that are more beneficial" (p.3)

Some of the advantages in using technology to teach a language are pointed out according to Cai (2012). The author states four main advantages, which are: the abundant teaching resources, easy access to information, the effect of direct interest, and teaching students in accordance with their aptitude. Regarding the abundance of teaching resources, it is said that the internet is a place where teachers are able to find a wide range of materials such as text information, pictures, and audio data about almost any topic. Secondly, teachers can easily access information by the internet which might be cheaper and faster than traditional information (textbooks). The third benefit regards the psychological term "direct interest" which is caused by the needs of discovering the thing itself. "Playing the role of direct interest in learning English is very important because it makes learning interesting and results in better performance owing to high degree of concentration" (Cai, 2012, p.842). The fourth and final advantage is about students' aptitudes where it is pointed that technology enhances personal learning which suits students' different abilities.

According to Abassi (2020) the use of technology in the language classroom has a direct influence on learners regarding the facilitation of almost unlimited resources and tools which enhance cooperative learning. Such resources involve developing language skills through experimentation, and helping students to raise awareness about what can be

considered formal or informal language. Likewise, Cai (2012) states that implementing technology in education might turn the pedagogical strategies from teacher-directed to a more student-centered pedagogy by focusing on "fostering linguistic sensitivity and improving listening comprehension and ability of expression so as to enable students to master English as soon as possible" (p. 843). Furthermore, the purpose of creating a pedagogy based on technology is that language acquisition is not only about grammar and invalid exercises, but on the constant practice of the students (Cai, 2012).

To sum up, technology to teach a language involves taking into account several aspects before thinking about implementing in the language classroom. First of all, as it was stated above, the teachers' attitudes and perceptions towards this innovation play a fundamental role in the success of a more technological lesson approach. Therefore, students can be benefited from its implementation due to the wide range of advantages that an e-learning pedagogy might contribute to the language classroom.

2.2.1 The role of ICT in language teaching

According to Hafifah and Sulistyo (2020), teachers and learners must be *digital literate* or *tech-Savvy* in order to be prepared for the education in the 21st century which involves the ability to use ICT applications and procedures as teaching and learning tools. The term ICT stands for Information Communication Technology, and it started to be used in the early 1990s when the internet, computer technology, and other telecommunication media began to be present in the educational field, more specifically in English Language Teaching (Hafifah and Sulistyo, 2020). Previous research on ICT in ELT has shown several advantages when teachers recognize the benefits of technology, update the technology issues, equip themselves with the ability of teaching savvy-students, and more importantly "make

use of the technology by applying it in teaching to increase students' achievements and make them ready in facing the multimedia technological expansion and digital literacy era" (Hafifah and Sulistyo, 2020, p.186). In order to illustrate the advantages of ICT integration in ELT, previous research based on Ahmed, Qasem and Pawar (2020) will be reviewed, it will also be reviewed how teachers in various contexts perceive ICTs in their EFL teaching.

In 1998 Warschauer and Healy (pp.57-71) reviewed computer and language learning stating that such softwares are beneficial for students due to it brings closer models of native speakers' realistic language which might aid when practicing and assessing language skills. Such authors enlist the values of computers in language instruction as follows:

- Multimodal practice with feedback (in various aspects of language);
- Individualization in large class;
- Pair and small group work on projects, either collaboratively or competitively;
- The fun factor
- Variety in the resources available and learning styles used;
- Exploratory learning with large amounts of language data; and
- Real-life skill-building in computer use.

In 2006 Çakir suggested that the implementation of audio-visual materials have a greater impact on language teaching, thus he remarks the importance of the application of technology in the language classroom. Additionally, it is stated that such resources play a significant role when developing communicative skills because the techniques may aid students to contextualize what they have learned. Furthermore, Çakir (2006) claims that video activities techniques help students to develop students' skills, provide more

opportunities for practice when repeated and replay, and that students feel more attracted and enjoyable.

Saglam and Sert (2012) demonstrate positive teachers attitudes towards the role of educational technology for enriching language instruction. Teachers also believe that their students maintain a positive attitude towards using technology in learning. On the other hand, challenges are acknowledged by teachers who claim the lack and need of training for both teachers and students. Finally, Saglam and Sert (2012) concluded that the use of technology in ELT encourages students to construct their own knowledge and helps to create a motivational environment for students by exposing them to lifelong learning skills and strategies, and providing materials for different students with different learning styles.

As well as Çakir (2006), Pravin and Salam (2015) examined the effectiveness of ICT in ELT but in a primary school context. Their results did not differ from Çakir's, finding that using audio-visual content has a strong potential in enhancing interactive language classes. Their conclusion suggests that the success of the program is directly linked to the design and implementation of technology in classrooms and training that teachers might receive to learn to integrate technology. Furthermore, Saeed's (2015) findings show that most of the EFL teachers in his study have positive attitudes towards ICT integration in the language classroom. However, most of the teachers were not well trained to use technology and most schools did not have computers, thus he suggested developing computer skills before trying to implement technology.

Results from different studies (Guan, Song and Ali, 2018; Gonen, 2019) have revealed that the integration of computer media in English language teaching makes

classroom more interesting and fun as well as it creates a motivating learning atmosphere, foster active participation, and help teachers to create more individualized learning for the different students' needs and interests. Furthermore, students' language skills might be improved when developing ideas in English thanks to the wide range of materials that are provided by the addition of ICT in the English language teaching classroom.

On the whole, the previous review provided significant evidence of the advantages that ICT integration in the ELT classrooms has. Therefore, it can be said that most of the studies demonstrated that ELT teachers and students embrace the integration of ICT in the classroom and that they have a positive attitude towards using technology in the educational field, nevertheless, studies also revealed that there is still a lack of teacher training which is expected to be given in order to completely take advantage of these innovative pedagogies.

2.2.2 The role of the iPad in the language classroom

One-to-one technologies are still chosen by schools because it is believed that such technologies will best prepare students for 21st century learning and that they will provide a better quality in education (Frazier, Trekles, and Spores, 2019). Frazier et al (2019) claim that the success of the implementation of the iPads or tablets in schools is due to leaders from such schools having a clear vision, considering equity, and involving many stakeholders who focus on teaching and learning. Nevertheless, Miranda and Rusell (2011) state that there exists a pressure for introducing 1:1 technology and the risk of such a pressure might guide teachers and students to an absence of input or involvement. However, "the iPad is the dominant computer tablet and m-learning device in schools today" (Young, 2016, as cited in Frazier et al, 2019, p.3). Therefore, teachers have the responsibility to integrate it into their teaching methods becoming an overwhelming task due to the slowness in how pedagogy

changes. Hembre and Warth (2019) claim that the role of the iPad is deeply practically and pedagogically discussed and analyzed by teachers when it is first integrated, which remarks that "new tools do not enter into a vacuum; rather they interact with the teachers, the pupils, and the classroom environment" (p.10). To Hembre and Warth (2019) the role of the iPad is intertwined and connected to social material actors in the classroom "such as teachers' notions of the tool and additional digital and non-digital resources" (p.12). The role of the iPad might differ from context to context depending on how institutions approach these new technologies (ibid). Furthermore, Mcvicker (2017) finds out in the Jewellverse context that the iPad plays an important role when preparing and integrating it for content and coursework assignments, such an integration might and should change traditional teacher education with old beliefs and practices. Additionally, the author states that by doing this not only current students will be benefited, but also for the future students that will go out into the schools and teach. Thereby, Mcvivker (2015) suggests that pre-service teachers should design "meaningful lessons that integrate iPad technology and applications that will facilitate learning for their students" (p.6), and that there is no best way to integrate technology, so pre-service teachers may seek and practice several ways to use iPads.

Ahmed and Nasser (2015) provide significant insights in why to use the iPad within the language classroom. These authors mention that the iPad has "the capacity to create balance and effective teaching and learning environments through highly engaging lessons, communication, and collaborative learning" (p.755). Moreover, other features have been assigned to this gadget such as enhance learners' creativity and autonomy, additionally it is a portable tool which allows quick and easy access to resources (ibid). The features mentioned before are going to be explained to have a better understanding of them.

The hardware of the iPad has a multi-touch interface which makes it interesting due to the characteristics that incorporates such as spread and pinch gestures that learners can use to enlarge images or make them smaller only by using their fingers. Students also can scroll up and down the screen to move through a text which "not only make a lesson more engaging but also can capture the students' imagination" (Ahmed and Nasser, 2015, p.755). Ahmed and Nasser (2015) state that digital characteristics in digital textbooks, such as pictures that go beyond static images, might make more interactive learning and give a new dimension to student-centered learning.

The following feature relates to communication and collaborative learning that are given by the ease and accessibility of technology (Ahmed and Nasser, 2015). These authors claim that "through interaction and the sharing of knowledge, common educational goals can be easily reached" (p. 756). They also mention that thanks to the wireless communication among the iPad, teachers, and students this interaction has no bounds, if it is decided.

The iPad has also the ability to foster creativity and learners' autonomy when using it in a project-based instruction (Ahmed and Nasser, 2015). Project-based learning is described by Janjua (2013, as cited in Ahmed and Nasser, 2015) as an instructional approach which tends to engage, interest, and motivate students that allow them to reflect on their thoughts and beliefs to make decisions to construct the project. Ahmed and Nasser (2015) claim that using certain applications in the iPad will give students freedom to be creative and take control of their own learning.

Finally, the portability and quick and easy access to resources makes the iPad a device that has it all (Ahmed and Nasser, 2015). The characteristics of the iPad, like its weight of

613 grams, make them a good candidate that can replace traditional textbooks and traditional learning because its applications such as electronic textbooks, note-taking applications, and online research facilities makes the iPad a handy device (Molnar, 2013). Therefore, the iPad proposes a new model with paperless classrooms "where its flexibility and versatility make it an extremely valuable learning tool for ELLs" (Ahmed and Nasser, 2015, p.757).

2.2.3 Previous research on the use of iPads in language teaching

This section will provide an overview of previous research on the use of iPads in language teaching and learning by making a chronological analysis through several researches starting from 2012 just two years after the first iPad was launched by Apple in the United States and after to the rest of the world.

During 2012 many studies were conducted about the use of the iPad in children on the autism spectrum (Fan, 2012; Cardon, 2012) and no studies were found about the iPad utilization when teaching or learning a language. However, articles regarding iPads implementation with children in the autism spectrum suggests that such an innovation is an effective teaching tool for this specific context due to all its characteristics which are: easy to navigate, cost efficient, all in one tool which includes web, communicating, math, reading, writing, and learning (Fan, 2012). Moreover, Fan (2012) claims that the iPad is an engaging, motivational, and portable tool for students with autism spectrum, therefore, it might help such students to learn and overcome challenges. Additionally, Cardon (2012) claims that the use of iPads highly motivates students who increase their attention and this is a learning opportunity. Finally, Fan (2012) suggests that "educators can alter the entire framework of special education by aligning curriculum with the iPad, so students with an array of strengths and skills from a widely diverse background can all benefit" (p.34).

Although four years had passed in 2014 since the iPad was launched by Apple, making research about its implementation in language learning was not common since no specific studies were found. Nevertheless, the closest research was made on the mobile assisted language learning (MALL). Soleimani, Ismail, and Mustaffa (2014) explored the acceptance of this modality among postgraduate's ESL students in Malaysia. Soleimani et al (2014) show that there is a positive perception of MALL in enhancing learners' English. These authors state that the positive results are due to by implementing MALL students have access to a wide range of materials which students are able to exploit. "Since the mobile phone can be used anytime and anywhere, it can enable teachers to discuss, correct, direct and appoint tasks to their students without having to be physically present" (p.461). Nonetheless, Burston (2014) suggests that MALL still faces many challenges because pedagogies such as behaviorism, teacher-centered, and transmission models are dominant in MALL applications. However, Burston (2014) states that in such a year:

> Smartphones and tablet devices have now reached a point in their development where they are capable of pedagogically supporting virtually anything that can be done with a desk-bound PC. Moreover, they add an anytime, anywhere, dimension to language learning that allows instruction to be individualized in a way that is just not possible with stationary computers (p.461).

Lawrence (2016) and Alzaidiyeen (2017) provide significant insights on the acceptance of the implementation of the iPad by English learners, and on English as a foreign language students' attitudes towards the utilization of iPad in language learning. Both studies agree that iPad integration in the language classroom has been well accepted by learners in such contexts. Alzaidiyeen (2017) explains that the acceptance of these devices is due to

nowadays participants are familiarized with iPads and most of them use iPads in their daily lives. This idea is supported by Lawrence (2016) who claims that an important predictor of iPad acceptance among learners is the context in which it is being introduced, highlighting that it is important to provide the necessary knowledge, hardware, software, training and support necessary. Furthermore, Lawrence (2016) suggests that in order that learners accept this innovation and so iPad might enhance language learning, it is important "to raise awareness of the need to carefully support learners as they adopt these values through support, training and evidence of the usefulness of the device" (p.42).

Auquilla and Urgiles (2017) examine he importance of the iPad use and they present a variety of significant applications employed in the field of education, more specifically in the field of English language teaching and learning. It is highly important to analyze the importance of the use of the iPad, but it will be nothing if the applications that are used to teach English are not examined properly. Auquilla and Urgiles (2017) state that "it is evident that the use of the Apple's iPad device and educational apps may have a crucial role in today's classroom instruction because they both can greatly enrich the teaching-learning process in English language lessons" (p.714). It is suggested by Auquilla and Urgiles (2017) that current teachers, who teach 21st century students, must be aware of the wide range of benefits that the effective implementation of the iPad device and apps bring into students' overall learning and language learning. Additionally, teachers are always responsible of updating their practices, so that they are able to include the latest technological advances, thus the classroom can fulfill 21st century students' needs (Auquilla and Urgiles, 2017).

Tseng (2019) introduces the concept TPACK, which is a term that stands for Technological Pedagogical Content Knowledge. Such a concept has emerged because of the

increment of the interest in research on teacher knowledge about technology integration over the past decade. Nonetheless, Tseng (2019) identifies the lack of research in this area of how teachers transform their teaching with technology. Therefore, he adopted the Substitution, Augmentation, Modification, and Redefinition (SAMR) model to investigate the degree to which Taiwanese English as a Foreign language (EFL) teachers enacted their TPACK in the context of teaching English with iPads. The result of such a study suggests that few teachers really transform their teaching by implementing the use of the iPad, and that this device acts as a substitute to deliver linguistic input to their students in conventional teacher-centred classrooms. The author suggests to do further research on this specific topic, because his study is limited to his context and the few English teachers who participated in it.

2.3 Teacher's cognition

This section provides a review of Borg (2006) work about teacher cognition through the last decades in order to explore how this topic has been explored from 1970 to 2000. Borg (2006) claims that research on teachers' cognition draws on a tradition of educational research which stretches back over 30 years since 2006. Therefore, it will outline the origins and growth of this tradition. Borg starts its review from 1970 where he states that, it was the year where research on this matter rapidly increased and "it is characterized by a number of perspectives which teachers' mental lives can be studied" (p.5).

The model of 1970 did not focus on the cognitive processes that might influence teachers teaching, the main goal in this year was to identify teaching behaviors that were effective and to study links between these behaviors and learning outcomes, because learning was seen to be a product of teaching (Borg, 2006). On the other hand, Borg (2006) mentions that alternatives for this approach emerged in 1960 with the development of cognitive

psychology which highlighted the influence of thinking and behavior, such developments suggested that "understanding teachers requires an understanding of teachers' mental lives rather than an exclusive focus on observable behaviors" (p.6). Furthermore, in this year it started to increase the recognition for teachers as active and central roles for shaping educational processes.

Borg (2006) cites the report of a group of experts in various areas of teaching research of the National Institute of Education in the United States in 1975, such a report marked the start of a tradition of research into teacher cognition. The report of this group argued that:

> It is obvious that what teachers do is directed in no small measure by what they think … To the extent that observed or intended teaching behavior is 'thoughtless', it makes no use of the human teacher's most unique attributes. In so doing, it becomes mechanical and might well be done by a machine. If, however, teaching is done and, in all likelihood, will continue to be done by human teachers, the question of relationships between thought and action become crucial.
>
> (National Institute of Education, 1975: 1, as cited in Borg, 2006, p.7)

In 1980 the research conducted on the study of the cognitive basis of teaching started to expand rapidly due to the bases built in the last decade. 1980 was characterized by the main focus on decision making and teacher knowledge (Borg, 2006).

Borg (2006) found in one study (Shavelson and Stern, 1981) two justifications to examine teachers' mental activities. Firstly, it is claimed that the behavioral model of

teaching might be conceptually incomplete if teachers' cognitions are not taken into account. Secondly, "research linking intentions and behavior can inform teacher education and the implementation of educational innovation" (pp.10-11) such links would be the ones to give better connections between the teacher cognition research and teacher education which would emerge strongly later in the decade.

The following figure conceptualized the developments of the relations between teacher cognitions and classroom practices. The authors decided not to make it linear but, instead they considered a cycle shape in order to show "that the conditions that inform a decision will, in all likelihood, be changed somewhat by the consequent behavior of the teacher" (Dunkin and Biddle, 1974, as cited in Borg, 2006). Consequently, cognition started to be conceptualized and affirmed as a key factor in shaping classroom events and vice versa. Moreover, Shavelson and Stern (1981) revealed that knowing certain information about students such as ability, sex, and classroom behavior, had an impact on teachers' judgements and decisions, thus teachers decided how to act in the classroom. However, the current review shows how the existing research had not revealed any clear relationship between teachers' beliefs and their pedagogical decisions (Borg, 2006). "This interest in the congruence between teachers' beliefs and actions remains current today" (p.12).

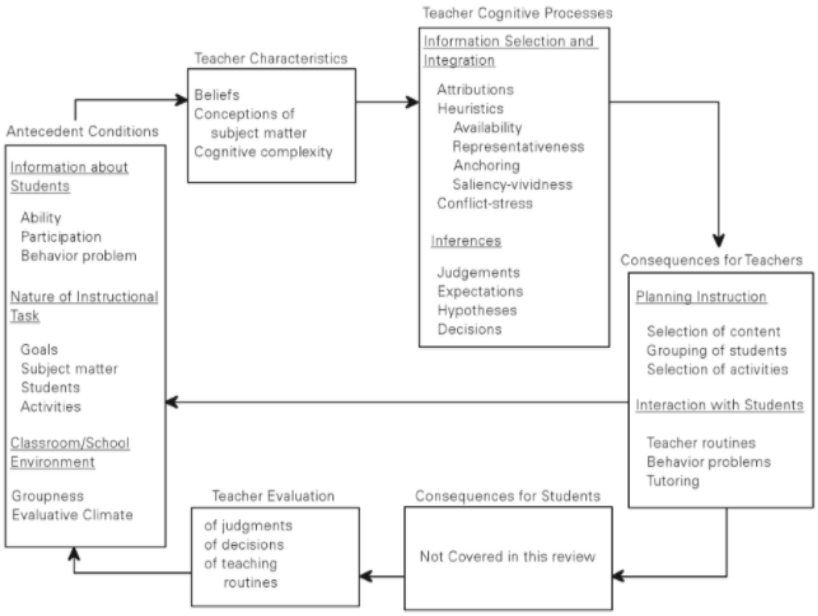


Figure 1.1 Overview of research on teachers' judgments, decisions and behavior (Shalvelson and Stern, 1981: 461, taken from Borg, 2006)

In 1990 a series of important reviews of different aspects of the literature on teacher cognition increased and characterized this decade. Borg (2006) explores several authors who emerged with different perspectives on the field such as Pajares (1992) who focused on the meaning of beliefs in research on teaching, Carter and Doyle (1996) and Boroko and Putnam (1996) made research on the topic learning to teach ,while Richardson (1996) focused on attitudes and beliefs, and Calderhead (1996) examined beliefs and knowledge. This line of research continues during this decade and Borg (2006) gives key concepts that follow up such a line. The main concepts were "Teacher knowledge and learning to teach", "Teachers' beliefs", "subject-specific teacher cognition", "Conceptions of knowledge", and "Perspectives from teacher education and educational psychology".

Borg (2006) claims that the issues highlighted in this review constituted the basis of research of teacher cognition which remain influencing the direction of current teacher cognition research.

Finally, the developments of teacher cognition in the new millennium continue by focusing on teacher knowledge where two further reviews of literature were published and had become the most widely used term in the study of teacher cognition (Borg, 2006). Furthermore, Verloop, Van Driel and Meijer (2001) claim knowledge as "a superordinate term from all kinds of cognitive constructs" (Borg, 2006, p. 38). Therefore, "the argument here is aiming to separate knowledge, beliefs and related concepts is not a particularly fruitful exercise given that in the mind of the teachers these constructs are not held or perceived distinctively" (p.38).

2.3.1 Defining language teacher's cognition

In order to define teacher cognition, first, a review of what is cognition will be done. According to Carter (1990, as cited in Metashir, 2017) cognition is a mental process where knowledge and understanding are acquired through thought, experience and senses. Metashir (2017) claims that such a process involves other processes like knowledge, attention, memory and working memory, judgment and evaluation, reasoning and "computation", problem solving and decision making, comprehension and production of language, etc. All the processes that take place in human cognition are "conscious and unconscious, concrete or abstract, as well as intuitive (knowledge of language) and conceptual (model of language), cognitive processes use existing knowledge and generate new knowledge" (p.6).

Cognition can be analyzed through different fields, contexts and perspectives such as linguistics, neuroscience, psychiatry, psychology, education, philosophy, among others. Psychological and Philosophical fields put the concept of cognition in relation to the abstract concepts like mind and intelligence. “It encompasses, the mental functions, mental processes (thoughts), and states of intelligent entities (human, collaborative groups, human organizations, highly autonomous machines, and artificial intelligences)” (Metashir, 2017, p.11). Therefore, the concept utilization differs depending on the field where it is used. In psychology and cognitive science, cognition refers to how an individual processes their point of view through psychological functions (ibid).

Thus, teacher cognition is defined by Metashir (2017) as the processes of knowledge acquisition and use that teachers engage in with regards to their practice” (p14). Furthermore, Borg (2003) uses the term teacher cognition to refer to “the unobservable cognitive dimension of teaching, what teachers know, believe, and think” (p.81). Therefore, language teacher cognition refers to “what second or foreign language teachers, at any stage of their careers, know, believe, and think in relation to topics relevant to language teaching” (ibid, p,82). The next figure taken from Borg (2003) illustrates the characteristics of teacher cognition. The four main characteristics are: schooling, professional coursework, contextual factors, and classroom practice. Such characteristics interact to conform the teacher's cognition.

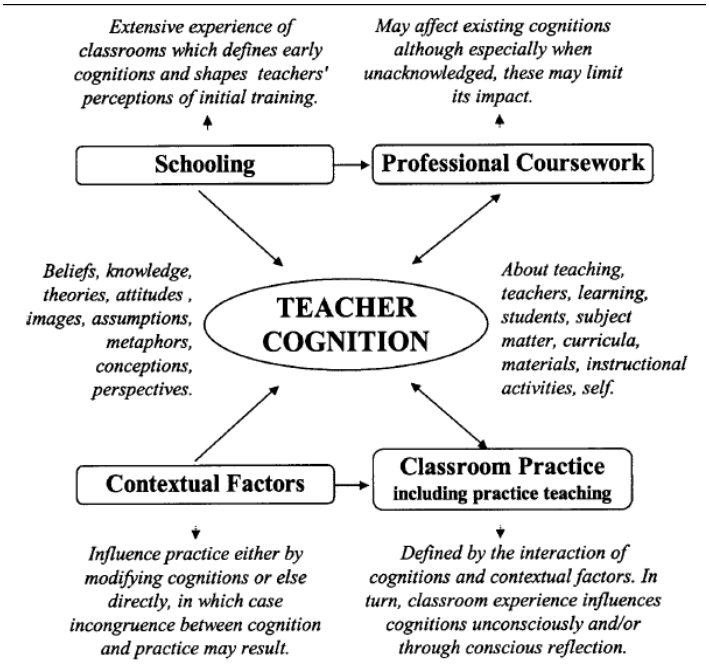


Figure 1. Teacher cognition, schooling, professional education, and classroom practice (Borg, 2003).

2.3.2 Teacher's attitudes and cognition towards the use of technology

The first section reviews teachers' attitudes towards the use of technology by analyzing the study of Ahmed, Qasem and Pawar (2020).

Ahmed, Qasem and Pawar (2020) claim that in their study, teachers demonstrate to have highly positive attitudes towards the use of technology in language teaching. Moreover, teachers believe that using technology in English language teaching is "beneficial and effective, facilitates EFL learning and teaching, motivates students to learn, saves time and efforts, enhances students' autonomy and self-learning and develops students' language skills" (p.68). Ahmed et al (2020) outline many other studies on teachers' attitudes towards using technology in their language teaching which demonstrate a high overall positive

attitude towards the inclusion of these innovations (Albirini, 2006; Alshumaimeri, 2008; Hu and McGrath, 2011; Şahin-Kizil, 2011; Saglam and Sert, 2012; Mollaei, & Riasati, 2013; Kinik, 2014; Thapaliya, 2014; He, Puakpong & Lian 2015; Saeed, 2015; Zhelezovskaia, 2016; Artan, 2016; Thamarana, 2017; Aydın, 2018). Ahmed et al (2020) suggest that such positive attitudes might be considered as a good predictor on how the implementation of technology can be perceived in other contexts. Nevertheless. teachers' poor competence among other factors are seen as challenges to face when trying to implement technology in the classroom (ibid). Furthermore, Galván and López (2016) claim that "one of the principal obstacles for the production of normalization of ICT in English teaching is teachers' attitudes towards them" and that in many cases this is due to "teachers fear of expressing opinions about ICT or admitting that they do not possess the necessary training to integrate them in their teaching practice" (p.269). In addition, Galván and López (2016) concluded that the integration of ICT improves education in general but, none of the teachers in their study believed that ICT "have proved a revolution in the field of education due to technology are used to work in the same way as in traditional teaching so far" (p.272).

In order to review teachers' cognition towards the use of technology, the following topics will be analyzed: teachers' beliefs towards the use of technology, teacher's knowledge towards the use of technology, and teachers' thoughts towards the use of technology.

Mertala (2019) conducted a study where the main focus was to review teachers' beliefs and technology integration where it was found that even though there were a large number of studies, only two shortcomings could be identified from the technology- related teachers' beliefs research. The first shortcoming refers to only focus the study on what teachers believe about the role of technology in teaching and learning, which might be an

emergent issue due to more features are found on teachers beliefs such as "beliefs about knowledge, their students, the context in which they work, subject matter, as well as moral dilemmas and societal issues that affect their work" (Mertala, 2019, p. 335). Mertala (2019) claims that the second shortcoming is that technology tends to overlook the role of the different educational contexts in which the study takes place. Therefore, it was concluded that there are pro and cons in teachers' beliefs about the integration of technology to children depending on the task, and that education, socialization, and care can be promoted through these activities. Furthermore, the finding of the study implies that teachers share similar hopes and anxieties regarding technology integration (ibid).

Teachers' knowledge has been explored from the last century to this one (Seufert, Guggemos, Sailer, 2020). Seufert et al (2020) found that in the literature of Park and Oliver (2008) there were four communalities of teachers' professional knowledge: pedagogical knowledge (PK), content knowledge (CK), pedagogical content knowledge (PCK), knowledge of context, and technological knowledge (TK). As a whole, the four types conform to the concept of TPACK. Levinz and Klieger (2010) talk about Shulman theory of the TPACK which are "the attributes of knowledge required of teachers who integrate technology in teaching" (p.355). Moreover, Levinz and Klieger (2010) claim that "the correct combination of technology in pedagogy in a particular subject must take into account the dynamic combination between the components and the intersections between them" (p.355). They also state that teachers who can easily maneuver between these interrelations are experts who differ from experts that only dominate only one discipline.

2.3.3 Previous research on teachers' attitudes and cognition on the use of iPad in language teaching

This section aims to provide a chronological review on the previous research about teachers' attitudes and cognition towards the use of iPad in language teaching. Firstly, a study conducted in 2014 in the united states of America and published by the journal of global literacies, technologies, and emerging pedagogies will be reviewed, followed by studies carried out in 2015, 2016, and 2018.

Vu, McIntyre, and Cepero (2014) in their study "Teachers' use of the iPad in classrooms and their attitudes towards using it" claim that various reports show the positive impact when using the iPad for teaching and learning purposes in the mass media. Furthermore, Walters (2011, as cited in Vu et al, 2014) states three main advantages that iPads have in this specific context, such as reduce the time in long-term projects by using the iPad applications, it also allows teachers to experiment with technology with ease, and the iPad is a portable and kinesthetic device than traditional desktop or laptop computer. Moreover, in 2011 Taborn (Vu et al., 2014) "reported the success of the pilot project to use the iPad in classrooms at Tower School in Marblehead, Massachusetts" (p.60). It is claimed that teachers' beliefs in such a study responded incredibly well to the adoption of the new technology.

Positive attitudes and cognition towards this innovation were shown during 2011, however, critics raised concern claiming that schools were rushing to invest in new technology that had not been researched before and proved its effectiveness in the educational field. Additionally, Baum (2011, as cited in Vu et al., 2014) points out that as well as other innovations, for instance computers, programmed learning, the internet, interactive

whiteboards, and laptops, the iPad would be a popular device which might ease teaching practices, but it would not revolutionize education. The author adds that with the inclusion of such devices "the classroom practice and teaching approach were almost the same as they were 50 or 100 years ago" (p.60).

According to Vu et al. (2014) in their study teachers find the use of the iPad somewhat useful, which might suggest that teachers were not highly enthusiastic towards this device usage. Nevertheless, the authors explain that while teachers who use the iPad along with all of their students rated the usefulness of it as very high, and the teachers who only used the iPad as a personal tool rated the usefulness of the iPad very low. Therefore, such a situation may suggest that the different perceptions and attitudes that teachers have regarding this matter is due to how teachers used the iPad in their teaching practices.

Lezama (2014) brings the topic of teachers' beliefs about the effectiveness of the use of the iPad in central Mexico context. She states that teachers recognize that the iPad is a tool that is able to provide numerous benefits. In addition, teachers believe that they play an essential role when trying to incorporate new technologies in the classroom due to teachers are now more concerned about what is their students' context. Furthermore, teachers know that receiving training is important in order to assure the success of any technological implementation.

Beauchamp, Burden, and Abbinett (2015) conducted research about the process of teachers in learning to use the iPad in Scotland and Wales in which two major implications emerged. First of all, Beauchamp et al. (2015) claim that teachers are able to learn how to use the iPad in a highly experiential way and playful fashion. Secondly, teachers reported

that the way in which they teach is more symmetrical than traditional power relationships normally allow. Moreover, this study suggests that the use of the iPad according to teachers is intuitive and easy to use and it might enhance teachers and pupils to co-construct their skills.

Young (2016) examined the attitudes of teachers towards using tablet computers, predominantly Apple's iPad, across 22 post primary-schools in Ireland. The study collected data from 259 teachers across all sites using baseline and follow up questionnaires. Findings of this study concluded that the analyzed teachers are positive about the usage of iPads. However, such positivity was reduced as a result of the "own teachers' confidence, competence, and changes in classroom practice that they would experience as iPad and m-learning projects commenced" (p.6). Furthermore, teachers hardly believe that the iPad is an effective tool due to its versatility and usability and that their fears towards this innovation were unfounded because teachers demonstrate the ability to "master the device and a variety of apps to create complex educational workflows" (p.6).

The last study (Walsh and Farren, 2018) provides significant insights and reinforces theory discussed above about the positive attitudes and cognition that teachers report of the use of the iPad in education. Additionally, the potential disadvantages and technical issues are discussed and resolved. The purpose of this study was to examine the barriers to implementing iPads in a primary school setting. The participants in this study included four subject specialist teachers and an ICT coordinator in the context of Ireland. Walsh and Farren (2018) find out that "the lack of time spent on professional development is the main barrier to effective implementation of iPads in the classroom" (p.16). Additionally, teachers believe that more training on the most appropriate teaching methodologies for iPad use is required.

However, due to the specific context in which the school provides access to up-to-date technology and funding for apps, the researchers raise the question "whether teachers lack professional development or lack the motivation to engage in it" (p.16).

2.4 Conclusion

This chapter has reviewed literature concerned with three areas of critical importance in this present research. Firstly, the literature that addresses classroom culture, with a particular focus on the development of the new classroom culture and the definition of culture and classroom culture were described. New classroom culture was defined and compared with the old classroom culture. Moreover, previous research on new classroom culture was provided. Secondly, technology to teach a language was developed as follows: the role of ICT in language teaching, the role of the iPad in the language classroom, and previous research on the use of iPads in language teaching. Finally, teacher cognition was encompassed by pointing out the next topics: defining language teachers' cognition, Teacher's attitudes and cognition towards the use of technology, and Previous research on teachers' attitudes and cognition on the use of iPad in language teaching.

The use of technology in the language classroom has been growing significantly in recent years. Factors such as motivation, attitudes, emotions, and beliefs have been found to play an essential role in the success of the implementation of new technologies. Empirical evidence has also shown that cultural contexts has an impact on the success of the implementation of the iPad. Nevertheless, it should be pointed out that, until now, very little empirical research concerning the use of the iPad in language teaching in Mexico appears to have been done using either qualitative and quantitative methods.

This study is an attempt to fill these gaps by exploring teachers' cognition towards the implementation of the iPad in their English classes. Three research questions are thus raised below to investigate how has the implementation of the iPad influenced the teaching practice of teachers and what changes have been provoked in regard to teachers' emotional responses as a result of the implementation of this innovation.

1. How has the implementation of iPads in an EFL class influenced the teaching practice of teachers in elementary level school in Pachuca Hidalgo?

2. What changes have been provoked in regard to teachers' emotional responses as a result of the implementation of iPads in an EFL class?

3. How has the implementation of the iPad influenced English language teachers' cognition?

CHAPTER III: METHODOLOGY

3.0 Introduction

This section is organized as suggested by Bitchener (2010); therefore, the current chapter introduces, and contains a discussion of the methodological approach and research design best suited to examine the research questions set out in Chapter 1. A qualitative methodology is proposed in order to arrive at answers to the research questions, more specifically, this can be considered as a case study (Richards, 2003). Furthermore, an overview of the research design follows, providing an outline of the key instruments employed; teachers narratives, and individual interviews. Given the importance of design and validity in the choice of the instruments, justification of each method used is provided. Moreover, the subsequent section includes an illustration of the specific process of data collection, followed by an overview of methods used for data analysis. Finally, ethics issues concerning the research process are clarified and a summary of the preceding sections is provided in the conclusion.

3.1 Research design

Creswell (2008) has highlighted the importance of using qualitative research to collect and analyze data with unique characteristics which rely on text and image data as well as diverse strategies of inquiry, so that designing a qualitative study appropriate for this diverse situation, which is classroom culture and teachers' cognition, is largely determined by the purpose of the study, the research questions, and the sources available. Due to the aim of the thesis is to explore processes, activities, and events of classroom culture and teacher's cognition a grounded theory approach (Creswell, 2008) to data collection was adopted to strengthen the study design. Two instruments were chosen to collect and triangulate the data which are guided teachers' narratives and individual interviews.

3.2 Research context and participants

This study was developed with the help of five female English teachers from a private primary school in Pachuca Hidalgo. They are between 30 and 50 years old. Each participant is in charge of one or two grades, however, all of them have taught from first to sixth grade due to the school policy which changes English teachers to other grades every year. Therefore, the participants possess experience with young and pre-adolescents learners. Moreover, each participant teaches in one day two groups with no more than 25 students each. Five specific participants were chosen due to their expertise in the use of the iPad and as mentioned in chapter I, the current study attempts to research the culture of the classroom that five experienced teachers had before and after the implementation of the iPad in their classes.

The school policy demands the integration of the iPad device in their lessons where the participants integrate it at least one day per week. The school provides each teacher with one personal iPad mini, and each student is also provided with one when teachers require them, thus students do not need to share the devices. Furthermore, the school has internet service all day, all the school week.

3.3 Data collection

The data collection procedure took place as a task for the 5 teachers. The 5 teachers were asked to write a guided narrative of no more than two pages where they described how the process of transitioning from teaching without iPads to teaching with them was, including emotional aspects and their teaching practice. The narrative could be written in any format that the participants felt comfortable with. The narratives were then emailed so they can be saved and analyzed.

The second step in data collection was the formulation of individual interviews to get more in-depth significant information. First, preliminary questions were designed according to the purpose of the current thesis, and then new questions were formulated according to the data obtained in the teachers' narratives.

3.4 Data analysis

As previously mentioned, the data analysis procedure in this section utilizes a grounded theory approach. This study followed a standard format for the process of data analysis in grounded theory which is provided by Creswell (1998, p.57). The format follows four phases that include (Castineira et al, 2010, pp. 2-3):

1. Open coding: the researcher forms initial categories of information about the phenomenon being studied by segmenting information.
2. Axial coding: The investigator assembles the data in new ways after open coding in which the researcher identifies central categories that influence the phenomenon, specifies actions or interactions that result from the central phenomenon, identifies the contexts that influence the phenomenon, and delineates the outcomes for the phenomenon.
3. Selective coding: the researcher identifies a 'story line' and writes a story that integrates the categories in the axial coding model. This phase typically includes the presentation of conditional hypotheses.
4. Conditional matrix: Although rarely found in grounded theory studies, this phase consists of the development of a visual portrayal that elucidates the social, historical and economic conditions influencing the central phenomenon.

This analysis strategy was primarily chosen because the type of teachers guided narratives data fit in the systematic process described above. Moreover, this strategy might provide a more ethnographic, emic and holistic view creating a whole picture of the event under study from the participants' point of view (Castineira, Preciado & Witten, 2010).

3.5 Ethics of the research

In accordance with the ethical guidelines when doing a thesis project, privacy and confidentiality were respected throughout the research process. The participants were reached via WhatsApp one week before the study commenced, and the aim of the research and the nature of the study were clearly explained to them. Requests were made for them to participate in the guided narratives and interviews on a voluntary basis, participants also signed a consent letter where requests for videorecording interviews were clearly stated. Participants were assured that participation or non-participation would not in any way affect their grade or relationship with the school. All participants were assigned a number to ensure their identities remained confidential. They were assured that no identifying information would be included in the study. Additionally, all participants were also assured that the information they provided would be used to fulfill the aims of research only.

3.6 Conclusion

This chapter has outlined the research design and described the research procedure used in detail. A qualitative approach was adopted in an attempt to fulfill the purpose of the current study which looks for defining culture of teaching before and after teachers integrate the iPad in their lessons as well as provide insights in how the implementation of the iPad influences teacher's cognition and how it is reflected emotionally and in their practices.

Guided teachers' narratives were selected as the principal tool for gathering data. The data from the narratives was supplemented by structured personal interviews.

CHAPTER IV: RESULTS

4.0 Introduction

An analysis of research data gathered during guided narratives and video conferences interviews is presented in this chapter, and the research questions posed in Chapter 1 are reiterated and addressed. Qualitative results from the data collected by means of guided narratives and interviews recording are examined. These interviews were carried out on the basis of qualitative content analysis which most of the questions emerged from the analyzed data in the individual guided narratives. Therefore, the data provided helped to the creation of a theory based on the theory grounded methodology which is explained and analyzed. First, the stages of the grounded theory are explained. Second, the results are presented in four sections: (1) Initial reactions towards the implementation of the iPad, (2) Sense of realization during the process, (3) Changes in participants way of teaching, and (4) Adaptation to the iPad. Such sections are divided into four tables which at the same time are divided into four sub-sections including: the participant, the emotions that emerged during the process, the evidence that support such a stage, as well as a visual representation which participants provided with emojis.

4.1.1 Grounded theory

As mentioned in chapter 3: Methodology, a grounded theory was used to carry out the current thesis project. In a grounded theory the researcher generates or discovers a theory, an abstract analytical schema or a phenomenon, that relates to a particular situation (Creswell, 1998). Firstly, interviews data is collected, then, categories of information are developed and interrelated, and a theoretical propositions or hypotheses or visual pictures of the theory are presented. (ibid). Moreover, the data was analyzed according to Creswell (1998) format for

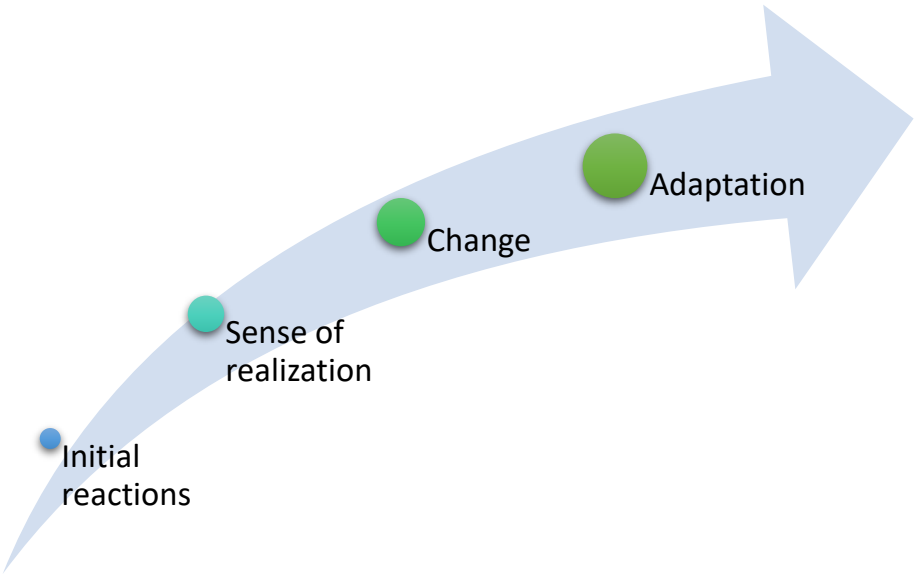
the process of data analysis in grounded theory: Open coding, axial coding, selective coding, conditional matrix.

The initial categories which belong to the open coding were the following:

- Initial preparation: teachers narrate that they prepared themselves before including the iPad in their classes. This preparation may be formal or informal.
- Emotional aspects: teachers start expressing their emotions towards the incorporation of the iPad, and they explain how they deal with them.
- Change: teachers express that they notice a change in their teaching practice.
- Conflict: teachers narrate if they had problems with the incorporation of the device or if there were conflicts between the new way of teaching and the old way of teaching.
- Advantages: teachers are able to see the advantages of the use of the iPad in their classes.

Axial coding: in this phase the initial categories are redesigned according to the data analyzed, central categories that influence the central phenomenon were identified as follows: Initial reactions, sense of realization, changes, and adaptation. These categories belong to the phenomenon called: evolution which is part of the step 3 “selective coding”. The story line is explained in figure 1.

Figure 1. Teachers' evolution of the implementation of the iPad in their classes.



The current story line is explained in the following subheadings, expanding on each category by providing information about each topic.

4.2 Initial reactions

During the data analysis, initial reactions were categorized as the first coding that the four participants reported. Such reactions are presented below. Table 1 is divided into two categories: beliefs and quotes. Such beliefs where the most frequent that teachers reported in the guided narratives.

Table 1. Teachers' beliefs at initial reactions step

Beliefs	**Quote**
Technological devices in daily life	*"I think that technological devices are the most used in our daily life" (narrative).*
Myself towards the use of technology	*"I thought I was not as good in technology as I supposed to be" (narrative).*
Myself towards students	*"I know the kids would know how to use the iPads" (narrative).* *"I could not know less than my students or allow them to know more than me, because that would cause me low morale" (narrative).*

Table 1 shows the most common beliefs that teachers reported in the first stage "initial reactions" in the guided narratives. The third question explored by the guided narrative was about the level of difficulty that teachers perceived when integrating for the first time the iPad in their lessons. The first believe that arose was about the use of technological devices in daily life which according to participant A, it is widely use in most people's activities. Such a belief might suggest that they use mobile devices every day in their personal life activities and very likely they incorporate those gadgets in their teaching. Currently, many people are attached to these tools and more institutions offer courses on how to include technological devices in education, that is why that not only young but also more experienced teachers are quite familiar with technological items.

The fourth question analyzed how participants felt at the beginning of this process therefore, the second belief that was found at this stage in the narrative was about how participants perceived themselves towards the use of technology. Participant B claimed that their abilities regarding the use of technology were questionable. This may be perceived as a

lack of experience in this specific field and so in the field of technology in education. Participant B's notion may propose that experienced teachers do not consider themselves as technological literates which might be due to the lack of courses focused on the use of technology in previous and not updated curriculums of university programs. In addition, the last belief was about how participants felt themselves towards their students at the beginning of this stage which was analyzed by the fourth question of the guided narratives. Participants D an C mentioned that they believed to know that their students would be better at using iPads than them and that fact might cause them authority issues inside of the classroom. People tend to believe that children and teenagers are better at using technological devices just because they are young and they use them all the time. Participants D and C prove this believe when claiming the afore mentioned. Although such an affirmation may be true, most adolescents and kids are not able to make use of iPads or tablets for academic purposes.

The next table illustrates the most common emotions that participants reported in the first stage of this process. It is divided into emotions, classification of the emotion (positive or negative), and the emoji representation for a more visual analysis.

Table 1.2 Participants' emotions in initial reactions

Emotion	Classification	Emoji
Fear (narrative)	Negative	
Overthinking (interview)	Negative	
Depressed (interview)	Negative	
Peace (interview)	Positive	

Table 1.2 shows the participants' emotions in initial reactions. The fourth question of the guided narrative explored how participants felt at the beginning of the process of implementing the iPad in their classes. Moreover, during the interview these ideas were explored more in depth in question 5 (see appendix 3). Participants A, C, and D shared similar emotions when reporting only negative ones. For instance, participant A confirm that professors think about everything that could go wrong when trying new strategies, in this case, new tools. Therefore, all those thoughts made them feel anxious towards the situation. As an example, participant D reported to feel obsolete, gray, and depressed. She expressed the following in their narrative:

"I felt that as a teacher I would not shine anymore and that if I was light, now, due to my lack of use of technology, I was a dull, dull star, and I became depressed".

Participant C claimed the following in the narrative and then it was reaffirmed during the interview:

"My biggest fear was that they would use the iPad for not so good uses".

The afore mentioned beliefs and feelings might be due to participants were not exposed to a previous training where they could get use to these kinds of technologies. These ideas also suggest that novice teachers must be prepared to face the integration of new tools so that such negative emotions would not cause a big impact on teachers' professional and personal lives. Most participants reported what Mertala (2019) claims in her study that teachers share similar hopes and anxieties towards the integration of technology in the classroom. Furthermore, Hembre and Warth (2019) claim that the integration of the iPad might be perceived by teachers as an overwhelmed task because pedagogy changes very slow, in addition, they remark that "new tools do not enter into a vacuum; rather they interact with the teachers, the pupils, and the classroom environment" (p.10). Such issues might be arising since most schools around the world and Mexico are demanding the integration of technology in a hasty way, which leads teachers to not to listen to the students' technological demands and decide not to incorporate technology in their lessons. Such a decision comes from the fact that in the past, technology was not compulsory to use and little innovations regarding technology where integrated in teachers' lessons, therefore, current teachers tend to believe that they are less capable than their students when it comes to using technology

which provokes negative emotions towards educational technological innovations (Marek and Wu, 2019).

4.3 Sense of realization

A sense of realization was set as the second coding or part of the storyline of this evolution. The sense of realization refers to the act of becoming fully aware of something as a fact. In this section teachers started to notice the advantages and disadvantages of using the iPad in their classes. Table 2 demonstrate teachers' cognition regarding such a step while table 2.1 shows evidence of the four participants regarding their emotional status in this step.

Table 2 Teachers' beliefs at sense of realization step

Beliefs	**Quote**
Need to take action	*"I need to design; I need to know how to use the device in an appropriate way" (interview).*
The advantages	*"You realize that your methodologies, your strategies can get much better if you have these technological devices because is a tool for you as a teacher." (narrative).* *"What I have realized that my students become more autonomous because they use this technology more than I do. I learn from them and I'm trying to implementing what they teach me." (narrative).*
Not that difficult	*"At first I thought that using technology required great and deep knowledge, but I realized that by clicking, and clicking, I would advance" (narrative).*

Table 2 shows the three most common beliefs that were found with quotes from the participants guided narratives and interview. Participants reported the need to take action, the advantages that they were finding, and the realization that using the iPads were not as difficult as they used to believe. The first question of the narrative explored whether teachers have training previous the implementation of the technological devices or not, in addition this information was supported with questions 1 and 2 of the interview (see appendix 3). Participant A claims that in order to be prepared for this challenge, it was needed to do something about it. Moreover, it might be perceived that the participant wanted to be ready by learning how to use such an electronical tool so they can design a proper class.

In this stage, participants realized of some of the advantages that the implementation of the iPad brought to their classes. The question 7 of the guided narrative (see appendix 2) analyzed those beliefs. On one hand, participant B consider that these specific gadgets improve their teaching style by modifying the methodologies and strategies that were used. Such an opinion might suggest that technological devices help teachers to give more dynamic, varied, and interesting class. Guan et al (2018) and Gonen (2019) state that the integration of digital devices makes a class more interesting and fun, and it creates a motivating learning atmosphere, fosters active participation, and help teachers to create more individualized learning for the different students' needs and interests. On the other hand, participant C herself into a more autonomous class due to iPads integration which may propose that technological devices open the door to teachers to orientate students into a more self-study culture where they are responsible of their own learning. Cair (2012) states that the implementation of one-on-one technologies, such as the iPad, might foster the use of

student-centered pedagogies. In addition, Ahmed and Nasser (2015) claim that the iPad enhances learners' creativity and autonomy.

Finally, participant D reported that at the beginning thinking about using technology in the class was something impossible and it was very likely that implementing technology would require specific skills to do it. However, such a participant noticed that it was all the contrary, that by being patient and practicing, implementing technological devices was not as hard as they thought. Such an idea encourages the belief that teachers must be surrounded of the new tools or devices that they are going to execute so that they feel comfortable when it is the time to use them in their lessons.

Table 2.1 Teachers' emotions in the realization stage

Emotion	**Classification**	**Emoji**
Stress (narrative)	Negative	
Happiness (narrative)	Positive	
Disappointment (narrative)	Negative	
Sadness (narrative)	Negative	

Table 2.1 illustrate the most common emotions that teachers reported during the stage of realization. Question 6 of the narrative examine the most common problems that participants faced in this process. Participant A and participant C highlighted common issues that make wonder teachers to decide if it is worthy or not to adopt the use of the iPad in their classes. Both participants claimed the use of the iPad by students was not appropriately utilized. Participant C stated that students were found in webpages that were not appropriate for their age, and students used to enter in videogames webpages. Due to all these factors, participant A and C expressed to feel stressed, disappointed, and sad. Such participants restricted the use of the iPad in their classes as a punishment for their students. As a result, teachers felt unconfident to use the iPad again. Nevertheless, teachers reported to start feeling confident one more time because their students asked for the devices, and teachers knew that if they were correctly implemented, iPads are a tremendous help. After this, participants must transform their classroom management in order to supervise their students' activities during iPads time. Participant C reported the following in the interview:

"I knew the iPad was a good resource and the kids were asking for them. so, I was like, yeah is technology, I think they learn better in this way. The attitude of my students helped and trying to be more aware of these things. Some conditions were made to use the iPad".

Participants A and C expressed to have negative feelings towards the issues that arose during their teaching practice. They affirm that implementing new technologies with young students could be a problem when they are not well regulated. Participant A and C said in their narrative:

"For every perfect situation may be an issue".

"Some bad experiences that I had is that they visited sites that were not protected for children".

Such opinions might suggest that the use of technologies in the classroom should be considered as a serious matter, and that strategies to regulate their usage and monitoring students should be applied so that this type of problems can be avoided or reduced.

On the other hand, participants B and D reported to feel happy in this stage. Such participants found the benefits of using the iPad in their classroom and they take advantage of it. These participants suggest that the use of technological tools can be an enriching and enjoyable experience when they are well implemented due to the fact that problems can be avoided if they pay close attention to what their students are doing all the time. Such opinions may recommend that students must be watched all the time when working with tools that can give them access to many places.

4.4 Changes

This section addresses the changes that teachers experienced regarding their traditional teaching practice and the transitioning to the use of the iPad in their classes. Furthermore, the emotional responses are pointed out so that a clear idea can be perceived of how teachers react to certain changes. Table 3 represent the teachers' cognition in this stage and table 3.1 shows the evidence of such changes and emotions in each participant.

Table 3. Teachers' beliefs in the sage of changes

Beliefs	**Quote**
A different vision	*"I think it is a different vision of how you can teach something, any topic. It could be math, science, grammar, any topic. It is amazing how a device can transform your class". (narrative).*
Changing the dynamic	*"I think that you are able to change the dynamic of your lessons, it is not always the traditional form, you can implement something else". (narrative)* *"You realized that your teaching, your methodology has changed". (narrative)*
Change is a must	*"If the world has changed, one must change along with it, otherwise, one would be out of reality". (narrative)*

Three main beliefs are shown in table 3, such beliefs were reported by teachers in their narratives during the stage of changes. The question number 5 of the narrative explored if teachers got use to using the iPad and how was that process. Participants B and C claimed that in this process they were able to modify their teaching practice making it more up-to-date. Furthermore, participant A complements these ideas because she mentioned that now she sees her classes differently with a more astounding vision. Finally, participant D affirm that transform the traditional way of thinking is required in every teacher's mind due to the fact that times are changing all the time and if teachers are not open to improve their teaching practices, it is very likely that they become rusty and unemployed.

Table 3 demonstrate that all participants claimed that by using the iPad their vision, their dynamic, and their teaching had changed and all of them agreed that they needed to change so that they could improve their teaching practices. Teachers reflect what Abassi (2020)

suggests, the author mentions that the use of technology in the classroom influence teachers' dynamic of delivering a class and it has a direct effect on students. Learners will receive almost unlimited resources and tools which enhance cooperative learning (ibid). Additionally, Cai (2012) claims that the use of technology might provoke a shift on teachers' pedagogies making them more student-centered rather than teacher-directed, so that students are able to master English language as soon as possible.

Table 3.1 Teachers' emotions in the changes stage

Emotion	**Classification**	**Emoji**
Amazed (narrative)	Positive	
Fascinated (narrative)	Positive	
Confident (narrative)	Positive	
Strong (narrative)	Positive	

Table 3.1 shows participants' emotions regarding the stage of changes analyzed by the question 5 of the narrative by asking them if participants get use to this device and how was that process. Stage number three "changes" addresses positive emotions in all participants. Such emotions include to feel amazed, fascinated, confident, strong, and highly

technological. Participant D moved from feeling depressed to feel highly technological because she realized that the changes the she had implemented in their class had been well-received by their students. Participant claim that receiving training from the school was a key factor that let them feel more secure about their technological practices. Participant D mentioned the following:

"They started training me in my job. The coordinator of the technology department was very patient, and I asked many questions because she had to train me well to be able to answer all the questions of my students. I could not know less than them or allow them to know more than me, because that would cause me low morale, so I strived to learn and learn well to always be the one who knows the most and thus raise my image as a teacher".

Participant C stated in the interview that:

"I was happy and excited because something new was going to happen. I like learning a lot, so I took all the training and tried to implement it right away".

Participant A stated the next in the narrative:

It was after using the iPad with my own knowledge and after taking the course that I felt more secure of what I was doing in my classes with the iPad. I learnt many things.

These participants' emotions and ideas might suggest that teachers are able to modify their state of mind at the time they have more experience using technological devices. They become more confident and happier with the integration of such tools. Furthermore, based on participants' ideas stated above, training teachers in the technological field might provide

them with not only the sufficient knowledge to properly implement the resources but also, with the sufficient confidence to face the transitioning process.

4.5 Adaptation

The aim of this sections is to present the last point of the story line which was presented in 4.1 the grounded theory. This last coding refers to the process of adaptation that participants went through while the implementation of the iPad in their classes. Table 4 provides teachers' beliefs and table 4.1 includes the emotional response, the evidence as participants quotes, and their emoji interpretation.

Table 4. Teachers' beliefs in the adaptation process

Beliefs	**Quote**
Knowing the benefits	*"I really know that these kinds of devices in a class can be wonderful so if you study or learn a little bit more about this, you can create a teaching and learning experience that is very interesting for your students". (narrative)* *"It's an interesting and marvelous process that helps you improve the dynamic of your lesson and also that can help you to make it more attractive to students and also to adjust yourself to younger generations". (narrative)*
Autonomous learning	*"With the class with technology, they study on their own devices by themselves. For me it represents autonomous learning". (narrative)*
You don't exist	*"You don't exist if you cannot work with technology, as a person and as a professional". (narrative)*

Table 4 shows that in this last point all teachers adapted positively to the use of the iPad in their lessons. Moreover, teachers reported only positive characteristics when using the iPad for educational purposes. All of them agreed that by using such devices students get more interested in their lessons because currently students and teachers have a highly technological lifestyle. All participants moved from an old culture of teaching to a new culture of teaching, where textbooks, tests, the amount of knowledge, competences, values, and teacher-centered approaches were no longer prioritized (Posch, 1994). Instead, by using new technology, teachers reconsidered their beliefs, values and habits in how they develop and perform their lessons, which shows that teachers modify their current teaching culture (Geer et al, 2015).

Table 4.1 Teachers' emotions in the adaptation process

Emotion	**Classification**	**Emoji**
Happiness (narrative)	Positive	
Comfort (narrative)	Positive	
Fascination (narrative)	Positive	
Flowing (narrative)	Positive	

Table 4.1 demonstrates that all the teachers expressed positive emotions and that they are more than happy to use the iPad in their classes. Happiness, fascination, and comfort are some of the emotions that teachers reported. Furthermore, teachers have found working with iPads as an amazing process because they have learned and redesigned everything what they used to believe. Previous research has shown that such reactions are seen in other contexts, for instance, Soleimani et al. (2014) showed that teachers react positively to the integration of new technologies, in this case was mobile assisted language learning (MALL). Moreover, Lawrence (2016) and Alzaidiyeen (2017) demonstrated the positive acceptance of the iPad by both students and teachers in the language classroom. Finally, Auquilla and Urgiles (2017) state that "it is evident that the use of the Apple's iPad device and educational apps may have a crucial role in today's classroom instruction because they both can greatly enrich the teaching-learning process in English language lessons" (p.714). Therefore, such reactions of the teachers were not surprising due to the previous findings in non-Mexican contexts. However, the current results demonstrate that this group of participants were able to properly adapt and change their teaching practices just as well as Europeans or Asian teachers.

The current thesis project demonstrated that teachers' cognition is correlated to events that teachers deal in their everyday practice and that such a practice as well as how events will eventually influence the way teachers perceive learning and therefore how they will act in their classrooms. Borg (2006) claims that teachers' cognition is worthy to be study because, he states that "understanding teachers requires an understanding of teachers' mental lives rather than an exclusive focus on observable behaviors" (p.6) and as a result teachers' practices might be better understood. Borg (2006) claims that a study about teachers' behavior may be incomplete if teachers' cognition was not considered. Secondly, he states

that “research linking intentions and behavior can inform teacher education and the implementation of educational innovation” (pp.10-11) such links would be the ones to give better connections between the teacher cognition research and teacher education which would emerge strongly later.

Teachers’ cognition in the current study appears to be highly influence by previous events in their professional and personal life, and the resulted cognition is not static, it is as Borg (2006) claims “a cycle shape” where cognition is a key factor in shaping classroom events and vice versa. Furthermore, participants’ cognition was also influenced by knowing students’ abilities and classroom behavior which had an impact on teachers’ judgments and decisions. For instance, participant D mentioned the following in the narrative:

“I could not know less than them or allow them to know more than me, because that would cause me low morale, so I strived to learn and learn well to always be the one who knows the most and thus raise my image as a teacher”

Participant A claimed the next in the interview:

“I believed that they can only have those devices at home for entertainment but when you see the switch on how to use it in my classroom and how I can use this device to learn English, it's interesting to see that change and to see how they interact with the iPad to learn a language instead to using it to play a game or so”.

4.6 Conclusion

This section presented the results obtained from the data collection, they were classified by following the grounded theory and the Creswell (1998) format where a story line was drawn according to the axials coding which emerge after analyzing both the narratives and the interviews. Furthermore, an emoji section was added in order to give a more interactive and visual way to explain participants' answers (Luna & Tapia, 2017).

The next chapter will present the conclusion of the current thesis project. It will provide the summary of the main findings, study contribution, further research, limitations of the study, and final thoughts.

CHAPTER V: CONCLUSIONS

5.0 Introduction

This chapter presents, firstly, a summary of the key findings of the research by reporting the main results of each stage that are the result of the grounded theory, which are: initial reactions, sense of realization, change, and adaptation. Consequently, the three research questions will be discussed in depth by setting a discussion where participants' personal experiences and the deviant case will be analyzed. Moreover, the study contributions will be pointed out by stating that the current thesis project adds significant insights into the specific context of the use of new technologies to teach a language for both language teachers and schools administrators. In addition, implications for further research will be addressed to review how this specific research might be extended in the future by the main author or other researchers whose research line and topics are similar to the current project. Additionally, the limitations of the study will be indicated, where general constraints regarding the process of carrying out this thesis project are mentioned and discussed so that further research might be improved in the aforementioned means. Finally, final thoughts conclude the current chapter. Such a section acknowledges one's point of view on how the process of thesis writing was developed from the very beginning to the final stage, things that were learn during the process, and the emotions that arose throughout the current venture.

5.1 Summary of main findings

The primary objective of this study was to investigate what was the culture of teaching before iPads were implemented vs the new culture of teaching when iPads were already set: and in particular, to examine how the implementation of the iPads in an English as a Foreign Language Class has influenced the teaching practice of teachers. The second research question of the study was to examine what changes have been provoked in regard to teachers' emotional responses as a result of the implementation of iPads in the previously mentioned context. Finally, a third research question emerged during the process of data analysis. Such a question aims to explain how the implementation of the iPad has influenced English language teachers' cognition throughout all this process of adaptation to the new technologies.

The study was carried out at a private primary school in Pachuca, Hidalgo. Five female English teachers were invited to be part of the study, however, due to personal issues one participant had to leave the project and only four of them were able to accept the invitation. Three participants were in their early 30's and one of them was above 50 years old. A grounded theory approach was adopted to carry out the present thesis project; a triangulated approach was selected to collect data by means of two main instruments: guided narratives and interviews. Although qualitative analyses of data indicated some relationships, these relationships could not be generalized beyond the specific teachers and contexts involved in the present study.

A preliminary finding from this research was the story line drawn which considers the stages that teachers got through when implementing the iPad in their classes. Such a story

line might be considered a theory about how English language teachers might live processes when higher administrators decide to implement new technologies to be integrated into the language classroom. Such a theory is not new, and it might fit in "theories of change". Fullan (2006) claims that "if teachers are going to help students to develop the skills and competencies of knowledge-creation, teachers need experience themselves in building professional knowledge" (p.4). Additionally, Fullan (2006) suggest that these theories must be flexible so that teachers can do new things in the setting in which they work. The current theory found four stages that teachers faced during their process of doing something new, they were: initial reactions, sense of realization, change, and adaptation. In the four stages teachers reported how their classes were evolving as well as their emotional state. In the initial reactions, there was a tendency of negative emotions, whereas in the cognition part most teachers claimed to think that their students could not know more than them about technology.

In the second stage "sense of realization", it was found that teachers believed that the use of the iPad was becoming more and more beneficial for their classes and that their students asked them to use it more frequently; The emotional part was divided into positive and negative feelings. The positive part reported feeling happy while the negative part reported stress and disappointment due to some issues that both teachers faced regarding students entering to not allowed websites.

In the third stage "changes", participants stated to have a different vision of their culture of teaching and that they realized that their teaching and methodology had changed. This stage was filled with only positive emotions for instance, fascination, amusement, and confidence were the most reported.

In the fourth and final stage “adaptation”, participants showed a full adaptation to the new technology, they reported only positive characteristics when using the iPad for educational purposes by stating that such devices diversify and dynamize their teaching practices besides to be appealing to younger generations. The four participants expressed strong positive emotions in this stage which make them want to keep working with such a device.

5.2 Study contribution to the research context

The results of the present study have confirmed that the correct implementation of the iPad in an English language classroom is a factor that must be recognized as important not only in the second language teaching field but also in all the educational sector that attempts to integrate new technologies in their curriculum. Clearly, an increased knowledge of new technologies, in this case the iPad, provides teachers with uncertainty at the beginning but as the process is evolving a sense of confidence and high self-esteem is achieved. Such characteristics might benefit not only teachers but also students and therefore the entire school. Prior experience and knowledge of how to properly implement the iPad in the classroom can assist a teacher in becoming more effective, resilient, and happy as a person and educator.

The teacher could adapt and create materials which ensure that the second language is learned and enjoyed by the students. Teachers should be constantly trained in these fields due to the speed that technology changes, so that they can be updated regarding the use of applications or websites, besides the use of the hardware and software of the iPad which is also constantly changing and updating. Furthermore, it is also suggested that teachers’ mental

health regarding their negative emotions can be taken into consideration in order to help them to smooth the impact of the changes and therefore ease the process of adaptation.

5.3 Further research

The results have provided further evidence confirming that the implementation of the iPad changes and modifies teachers' traditional practices and that negative emotions might be overcome when gaining experience and knowledge about all the usages that the device can have. Identifying more factors that can make teachers reject the use of such a device as well as why teachers might want to stop using it will help to have a better understanding about how teachers perceive the use of the iPad or other types of tablets.

Further research incorporating a similar design, and a larger sample size would be of value. The present study was limited to a very small number of participants, and it was not, therefore, possible to generalize its findings to an L2 population. Another area of research would examine variations in the implementation of the iPad at different educational levels. The question can be raised: would similar results be obtained if this study were replicated with teachers in an EFL context at different educational levels? Further research that considers implementing the iPad across educational levels would be of benefit. The advantage of looking across different educational levels would be the capturing of the implementation of the iPad teaching practice change and emotional responses that might not be detected at one educational level during a relatively short study span. Additionally, this information might be useful to assist teachers and curriculum developers to anticipate such responses in the classroom. Additional research is also needed to combine others' ratings

such as the students' and coordinators' cognitions to produce a more comprehensive assessment of the integration of technological devices like the iPad.

5.4 Limitations

The most evident limitation in this research was that of a small sample size, a limitation that prevented a clear generalized statement about the role played by the iPad on English teachers' cognition. The number of participants was too small to adequately address the research questions or to possibly generalize beyond the context of this study. With a larger sample, including a greater number of participants from different educational levels, any real differences would almost certainly have emerged. Still, the small populations did not negate recognition of the importance of the implementation of new technologies, and the integration of technological devices such as the iPad in L2 instruction.

This study was further limited by the duration of the research, which was relatively short; so that more participants could not be gathered. Finally, due to the covid-19 pandemic the instruments were limited to be carried out by distance only where the communication with participants was only via WhatsApp and videoconferences; therefore, the human aspect was not 100% involved.

5.5 Final thoughts

At the beginning of the current study, I was highly interested in research about how such electronic devices might influence teachers' cognition and emotions, because I could witness how several teachers got frustrated or enjoyed working with them. Furthermore, I was able to work with iPads and prove the advantages and disadvantages when implementing them in the educational field, but most importantly I was able to transform my own teaching

into a more technological one. Providing my students with such innovations, I felt how I was growing professionally and as one participant reported before “now I feel confident and highly technological, and that regardless of your age you are always learning, so keep on learning”. Conducting this study was a rewarding experience for me; because not only have I listened to teachers’ emotions and cognition but also, I have transmitted all the process they went through when times were uncertain for them.

REFERENCES

Abbasi, I. (2020). The Influence of Technology on English Language and Literature. English Language Teaching: Canadian Center of Science and Education, (13) 7, 1-7.

Ahmad, J. (2012). English Language Teaching (ELT) and Integration of Media Technology. *Procedia – Social and Behavioral Sciences,* 47 (2012), 924 – 929

Ahmed, S. T., Qasem, B. and Pawar, S. (2020). Computer-Assisted language instruction in south Yemeni context: a study of teachers' attitudes, ICT uses and challenges. *International Journal of Language Education.* 4 (1), 59-73.

Al-Sharqi, L and Saeed-Abasi, I. (2020). The influence of Technology on English Language and Literature. *English Language Teaching: Canadian Center of Science and Education,* (13) 7, 1-7.

Alzaidiyeen, N. J. (2017). English as a foreign language students' attitudes towards the utilization of iPad in Language learning. Malaysian Online Journal of Educational Technology, 5 (8), 16-24.

Auquilla, D. P., and Urgilés, G. E. (2017) The use of iPad and applications for English language education. *Theory and Practice in Language Studies*, 7 (9), 709-715. DOI: http://dx.doi.org/10.17507/tpls.0709.01

Beauchamp, G., Burden, K., & Abbinett, E. (2015). Teachers learning to use the iPad in Scotland and Wales: a new model of professional development. Journal of Education for Teaching: International research and pedagogy, DOI: 10.1080/02607476.2015.1013370

Bitchener, J. (2010). Writing an Applied Linguistics Thesis or Dissertation: A Guide to Presenting Empirical Research. Palgrave Macmillan.

Borg, S. (2019). Language Teacher Cognition: Perspectives and Debates. In: Gao X. (eds) Second Handbook of English Language Teaching. Springer International Handbooks of Education. Springer, Cham

Borg, S. (2006). Teacher cognition and language education research and practice. Bloomsbury Publishing.

Borg S (2003) Teacher cognition in language teaching: a review of research on what language teachers think, know, believe, and do. Lang Teach 36:81–109

Breen, M. P. (2001). The social context for language learning: A neglected situation? In C. N. Candlin& N. Mercer (eds.), English Language Teaching in its social context.New York:Routledge.

Brown, J. S., Collins, A. and Duguid, P. (1989) Situated Cognition and the Culture of Learning. *Educational Researchers,* (18) 1, 32-42.

Burston, J. (2014). MALL: the pedagogical challenges. Computer Assisted Language Learning, *27(4), 344–357.* doi:10.1080/09588221.2014.914539

Cai, H. (2012). E-learning and English Teaching. *IERI Procedia*, 2 (2012), 841 - 846

Cakir, I. (2006). The use of video as an audiovisual material in foreign language teaching classroom. *Turkish Online Journal of Educational TechnologyTOJET*, 5(4), 67-72.

Canagarajah, A.S. (2001). Critical ethnography of a Sri Lankan classroom: Ambiguities in student opposition to reproduction through ESOL. In C. N. Candlin& N. Mercer (eds.), English Language Teaching in its social context. New York: Routledge.

Cardon, T. A. (2012). Teaching caregivers to implement video modeling imitation training via iPad for their children with autism. *Research in Autism Spectrum Disorders, 6(4), 1389–1400.*

Cresswell, J. W. (1998). Qualitative inquiry and research design. Choosing among five traditions. Thousand Oaks: Sage.

Creswell, J.W. (2008). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (3rd ed.). SAGE Publications.

Castineira, T., Preciado, P. & Witten, M. (2010). A significant moment in a teacher's life: Different ways to approach qualitative research. Memorias de la Expopresencia 2010 de la Facultad de Lenguas en Eventos Nacionales e Internacionales. Editorial, BUAP: Puebla, MX.

Dela Rosa, J. P. O. (2016). Experiences, Perceptions and Attitudes on ICT Integration: A Case Study among Novice and Experienced Language Teachers in the Philippines. *International Journal of Education and Development Using Information and Communication Technology*, (12) 3, 37-57.

Douglas, T. and Seely-Brown, J. (2014) Exploring the Social Age & the New Culture of Learning. *Lifewide magazine,* 11, 10-12.

Fan, T. (2012) Enhancing Learning with the Use of Assistive Technology for Children on the Autism spectrum. [Master's thesis School of Education and Counseling Psychology, Dominican University of California].

Feiman-Nemser, S., & Floden, R. E. (1986). The cultures of teaching. In M. C. Whittrock (Ed.), Handbook of research on teaching (3rd ed., pp. 505-526). London: Collier-Macmillan.

Fischer, J., He, J., Klieme, E. (2020). The structure of teaching practices across countries: A combination of factor analysis and network analysis. *Studies in Educational Evaluation*, 65, 1-11

Fuller, B., & Clarke, P. (1994). Raising school effects while ignoring culture? Local conditions and the influence of classroom tools, rules, and pedagogy. Review of Educational Research, 64, 119–157. https://doi.org/10.3102/00346543064001119.

Galván-Malagón, C. & López-Pérez, M. (2017). ICT in the English classroom. Qualitative analysis of the attitudes of teachers of English towards its implementation in Secondary Schools. *Procedia – Social and Behavioral Sciences*, 237 (2017), 268 – 273

Geer, R., White B., Zeegers, Y., Au, W. and Barnes, A. (2015). Emerging Pedagogies for the Use of iPads in Schools. British Journal of EducationalTechnology, 48 (2), 490-498

Gönen, S. İ. K. (2019) A qualitative study on a situated experience of technology integration: reflections from preservice teachers and students. Computer Assisted Language Learning, 1- 27. DOI: 10.1080/09588221.2018.155 2974

Guan, N., Song, J., & Li, D. (2018). On the Advantages of Computer Multimedia Aided English Teaching. Procedia computer science, 131, 727-732.

Hafifah, G. N. and Sulistyo, G. H. (2020). Teachers' ICT literacy and ICT integration in ELT in the Indonesian higher education setting. *Turkish online journal of distance education.* 21 (3), 186-198.

Hembre, O. J., & Warth, L. L. (2019). Assembling iPads and Mobility in Two Classroom Settings. *Technology, Knowledge and Learning.*

Herrera, G. E. (2014). A Multimodal Exploration of Classroom Culture: A Critical Discourse Analysis. [Master 's thesis, Benemérita Universidad Autónoma de Puebla]. Repositorio Institucional de Acceso Abierto BUAP. https://hdl.handle.net/20.500.12371/5773

Hudson, R.A. (1998). Sociolinguistics. London: Cambridge textbooks.

Kayapinar, U., Erik, S. & Kose, N. (2019). The Effect of Tablet Use on Students' Success in English as a Foreign Language (EFL) Grammar Classroom. *Educational Research and Reviews,* 14 (5), 178-189

Lawrence, B. A. M. (2016). IPad acceptance by English learners in Saudi Arabia. *Canadian Center of Science and Education*, 9 (12), 34-46. URL: http://dx.doi.org/10.5539/elt.v9n12p34

Leininger M. M. (1985). Transcultural care diversity and universality: a theory of nursing. *Nurs Health Care*, 6, 208–12.

Lezama, P. A. (2014). *El uso del iPad como una herramienta que favorece el aprendizaje de los alumnos de quinto de primaria en Educación Privada en México*. [Tesis de Maestría, Tecnológico de Monterrey]. Repositorio Institucional del Tecnológico de Monterrey. http://hdl.handle.net/11285/626528

Levinz, A., & Klieger, A. (2010). Online tasks as a tool to promote teachers' expertise within the Technological Pedagogical Content Knowledge (TPACK). *Procedia Social and Behavioral Sciences.* 2 (2010), 354-358.

Luna, H. R., & Tapia, R. E. (2016). Facebook Groups as an Interactive Learning Resource. *Lenguas en Contexto, 8,* (8), 85-93.

Macvicker, C. (2017). Using iPads for Teaching Future Educators to Integrate iPad Use in Classroom. iPads in Higher Education (1st ed.). Cambridge Scholars.

Marek M.W., & Wu WC.V. (2019) Creating a Technology-Rich English Language Learning Environment. In: Gao X. (eds) Second Handbook of English Language Teaching. Springer International Handbooks of Education. Springer, Cham. https://doi.org/10.1007/978-3-319-58542-0_39-1

McCormick, J., & Alavi, S. B. (2004). A cross-cultural analysis of the effectiveness of the Learning Organization model in school contexts. International Journal of Educational Management, 18, 408–416. https://doi.org/10.1108/09513540410563112.

McGinity, M. (2002). *Reading behind the words: sociolinguistics aspects of attitude questionnaires.* Sociolinguistics (Unpublished paper). Symposium 14. University of Gant.

Mertala, P. (2019) Teachers' beliefs about technology integration in early childhood education: A meta-ethnographical synthesis of qualitative research. *Computers in Human Behavior*. 101 (2019), 334-349.

Metashir, Z. A. (2017). Teacher cognition. Ministry of Higher Education and Research. University of Al-Qadissiya. https://qu.edu.iq/repository/wp-content/uploads/2017/05/engs-13.pdf

Miranda, H., & Russell, M. (2011). Predictors of teacher-directed student use of technology in elementary classrooms: A multilevel SEM approach using data from the USEIT study. Journal of Research on Technology in Education, 43(4), 301–323.

Molnar, G. (2013). New learning spaces? M-learning's, in particular the iPad's potentials in education. International Journal of Interactive Mobile Technologies, 7(1), 56–60. doi:10.3991/ijim.v7i1.2398

Monyai, R. B. (Ed.). (2019). Teacher Education in the 21st Century. IntechOpen. DOI:10.5772/intechopen.77621

Nesbit, Tom (2000). "Cultures of Teaching," Adult Education Research Conference. https://newprairiepress.org/aerc/2000/papers/59

Nieto, S. (2002). Cultural difference and educational change in a sociopolitical context. (Eds). Language, culture, and teaching. Critical perspectives for a new century. (pp. 51-77) Lawrence Erlbaum Associates.

Öztürk, E. (2018). A Study of Primary School Teachers' and Turkish Language Teachers' Anxiety about Tablet PC Assisted Teaching. *International Education Studies,* 11 (6), 66 - 72

Paraskeva, F., Bouta, H. & Papagianni, A. (2008). Individual characteristics and computer self-efficacy in secondary education teachers to integrate

technology in educational practice. *Computers and Education*, 50, 1084-1091.

Peter Posch (1994) Changes in the Culture of Teaching and Learning and Implications for Action Research, Educational Action Research, 2:2, 153-161, DOI: 10.1080/0965079940020202

Parvin, R. H., & Salam, S. F. (2015). The Effectiveness of Using Technology in English Language Classrooms in Government Primary Schools in Bangladesh. In FIRE: Forum for International Research in Education, Vol. 2, No. 1, pp. 47-59.

Seufert S., Guggemos J. & Sailer M., Technology-related knowledge, skills,and attitudes of pre- and in-service teachers: The current situation and emerging trends, Computers inHuman Behavior (2020), doi: https://doi.org/10.1016/j.chb.2020.106552.

Saeed, Y. B. M. (2015). The effect of using computer technology on English language teachers' performance. SUST Journal of Humanities, 1, 64-79.

Saglam, A. L. G., & Sert, S. (2012). Perceptions of In-Service Teachers Regarding Technology Integrated English Language Teaching. Online Submission, 3(3), 1-14.

Shavelson, R. J. and Stern P. (1981). Research on teachers' pedagogical thoughts, judgements, decisions, and behavior. Review of Educational Research, 51 (1981), 455-498.

Soleimani, E., Ismail, K., and Mustaffa, R. (2014). The acceptance of mobile assisted language learning (MALL) among post graduate ESL students in UKM. *Procedia Social and Behavioral Sciences*. 118 (2014), 457-462. doi: 10.1016/j.sbspro.2014.02.062

Somekh, B. (2004). Taking the sociological imagination to school: an analysis of the (lack of) impact of information and communication technologies on education systems. *Technology, Pedagogy and Education*, 13(2),163-179

Thomas, D. and Brown, J. S. (2011) A New Culture of Learning: Cultivating the Imagination for a World of Constant. Soulellis Studio.

Tseng, J.-J. (2019). Do EFL teachers transform their teaching with iPads? A TPACK-SAMR approach. In C. N. Giannikas, E. Kakoulli Constantinou & S. Papadima-Sophocleous (Eds), Professional development in CALL: a selection of papers (pp. 71-85). https://doi.org/10.14705/rpnet.2019.28.871

U.S. Department of Health and Human Services Office of Minority Health. Assuring cultural competence in health care: recommendations for National standards and

outcomes-focused research Agenda. Washington, DC: U.S. Government Printing Office; 2000.

Valerie Walsh & Margaret Farren (2018) Teacher Attitudes Regarding Barriers to Meaningfully Implementing iPads in a Primary School Setting, Computers in the Schools, 35:2, 152-170, DOI: 10.1080/07380569.2018.1462674

Veen, K. & Sleegers, P. (2006). How does it feel? Teachers' emotions in a context of change. *Journal of Curriculum Studies*, 38 (1), 85-11

Vu, P., McIntyre, J., & Cepero, J. (2014). Teachers' Use of the IPad in Classrooms and Their Attitudes toward Using it. *Journal of Global Literacies, Technologies, and Emerging Pedagogies*, 2 (2), 58-76.

Walsh, V. & Farren, M. (2016). Teacher Attitudes Regarding Barriers to Meaningfully Implementing iPads in a Primary School Setting.*Computers in the Schools*, DOI: 10.1080/07380569.2018.1462674

Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. Language Teaching, 31(2), 57-71.

Young, K. (2016). Teachers' Attitudes to using iPads or Tablet Computers; Implications for Developing New Skills, Pedagogies and School-Provided Support. *Association for Educational Communications & Technology*, DOI 10.1007/s11528-016-0024-9

Zhang, L. & Nouri, J. (2018). A Systematic Review of Learning and Teaching with Tablets. *14th International Conference Mobile Learning*, 79-88

Zhu, X. and Li, J. (2020) Classroom Culture in China: Collective individualism learning model. Springer Nature Singapore. https://doi.org/10.1007/978-981-15-1827-0

APPENDICES

Appendix 1. **Carta de consentimiento informado**

CARTA DE CONSENTIMIENTO INFORMADO PARA PROYECTOS DE INVESTIGACIÓN EDUCATIVA

Yo _____, profesor (a) del curso de: _____ y de _____ años de edad, acepto de manera voluntaria que se me incluya como participante en el proyecto de investigación de tesis denominado: **THE NEW CULTURE OF TEACHING: THE IMPACT OF THE IPAD IN ENGLISH LANGUAGE TEACHERS' COGNITION**, luego de haber conocido y comprendido en su totalidad, la información sobre dicho proyecto, riesgos si los hubiera y beneficios directos e indirectos de mi participación en el estudio, y en el entendido de que:

- Acepto ser parte de los dos instrumentos requeridos para llevar a cabo este proyecto de investigación, los cuales son: una narrativa escrita, la cual puede tomar más de 30 min en escribirla, y entrevistas individuales vía zoom, las cuales tendrán una duración de 15 a 20 min y serán grabadas.

- Mi participación como profesor no repercutirá en mis actividades ni evaluaciones programadas en el curso, o en mi condición de profesor, no repercutirá en mis relaciones con mi institución de adscripción.

- No habrá ninguna sanción para mí en caso de no aceptar la invitación.

- Puedo retirarme del proyecto si lo considero conveniente a mis intereses, aun cuando el investigador responsable no lo solicite, informando mis razones para tal decisión en la Carta de Revocación respectiva si lo considero pertinente; pudiendo si así lo deseo, recuperar toda la información obtenida de mi participación.

- No haré ningún gasto, ni recibiré remuneración alguna por la participación en el estudio.

- Se guardará estricta confidencialidad sobre los datos obtenidos producto de mi participación, con un número de clave que ocultará mi identidad.

- Si en los resultados de mi participación como alumno o profesor se hiciera evidente algún problema relacionado con mi proceso de enseñanza – aprendizaje, se me brindará orientación al respecto.

- Puedo solicitar, en el transcurso del estudio información actualizada sobre el mismo, al investigador responsable.

Lugar y Fecha:

_____

Nombre y firma del participante:

_____

Lic. Héctor Rubén Luna Martínez _____

Nombre y firma de quien proporcionó la información para fines de consentimiento

Appendix 2. **Guided narratives**

Write in a narrative way in no more than 2 pages about the next topic: My process of transitioning from "not teaching with iPads" to "teaching with iPads" was …

In your narrative try to involve as many details as you can such as emotions, thoughts, beliefs, and knowledge.

Try that your narrative answers most or all of the next questions:

You can answer the questions either systematically or not.

1. Did you prepare yourself somehow to integrate the iPad in your class?
2. Do you consider your way of teaching to be the same from not using iPads to actually using them in your class?
3. Was it easy or difficult for you to integrate such a device in your lessons?
4. How did you feel at the beginning of this process?
5. Did you get used to it? How was that process?
6. What were or are the most common problems regarding the use of the iPad and your style of teaching? How does this make you feel?
7. What were or are the most common advantages regarding the use of the iPad and your style of teaching? How does this make you feel?

Appendix 3. **Possible interview questions**

1. In your narrative, you mention that you prepare yourself in order to implement the iPad in your lessons, could you explain what steps did you take in order to do so?
2. In your narrative, you mention that you did not prepare yourself in order to implement/use the iPad in your lessons, could you explain what was the result of being unprepared (after answer) and how did you feel?
3. In this paragraph, you explain that the way you teach changed when implementing the iPad, could you tell me how it changed and what feelings emerged with that?
4. In this paragraph, you explain that the way you teach (teaching strategies, techniques, routine) did not change when implementing the iPad, could you tell me why you think it did not change?
5. Why do you consider as easy/difficult the implementation of the iPad in your class?
6. In your narrative, you mentioned that you didn't/get used to it, could you explain why do you think this happened?
7. Regarding the problems that you mentioned, how do you think they can be avoided/overcome?

Appendix 4. **Solicitud de permiso de proyecto de tesis**

Heroica Puebla de Zaragoza a 21 de enero del 2021

Lic. María Fernanda Berganza Escorza

Directora general

Instituto Cedrus

Por medio de la presente reciba mis cordiales saludos.

Soy alumno del cuarto semestre de la Maestría en la Enseñanza del Inglés de la Facultad de Lenguas de la Benemérita Universidad Autónoma de Puebla la cual se encuentra ubicado en la calle 24 Norte 2003Humboldt C.P. 72370 Puebla, Puebla, México.

Como parte de mi proyecto de tesis del programa de maestría, elegí el Instituto Cedrus para poder desarrollarla. Para este fin, he elegido aplicar mis instrumentos de investigación a cuatro de los profesores de inglés del instituto Cedrus. La idea es que reporten su experiencia al trabar con iPads dentro del salón de clases y así puedan describir como esto ha ido formando su práctica docente.

Por lo tanto, la presente carta es solicitar su permiso para poder colaborar con los profesores de inglés de su prestigiosa institución y realizar el loable proyecto el cual me otorgara el grado de maestro en la enseñanza del inglés.

El proyecto se trabajará en horarios y días que no interfieran con las actividades de sus profesores en el mes de febrero del presente año. Cada profesor recibirá una carta de consentimiento informado para proyectos de investigación educativa el cual deberán leer y firmar si deciden aceptar ser parte de la investigación.

Quedo, estimada Lic. Berganza a sus órdenes y a la espera de su confirmación para poder proceder con este proyecto.

Sin otro particular,

Lic. Héctor Rubén Luna Martínez

Alumno de la MEI BUAP

Seminario de Investigación II

Appendix 5. **Participant D narrative**

HOW I GOT INVOLVED IN TECHNOLOGICAL TEACHING.

Talking about the use of new technologies is quite an issue, but if we are also the ones who must train more people, whether they are minors or adults, the issue becomes more serious and compromising.

I remember when I went to ask for a job at a highly technological school, I did not even know how to get online with an iPad, which made me feel obsolete and let's say, gray ... I felt that as a teacher I would not shine anymore and that if I was light, now, due to my lack of use of technology, I was a dull, dull star, and I became depressed.

However, in my interview I had stated that I had a high taste and motivation for learning and training and this was taken into account, as they finally voted to hire me and train me, and they did.

I used to be the type of teacher who followed the same line, with photocopies and the same linguistic mechanizations that I had been using for many years, and which I swore were almost magical, but when I began to use the technological part, I discovered I liked it more and more, my classes became varied and fun, and I transmitted a happy feeling and emotion to my students.

In fact, my first steps in technology were one, to use audios, two, audios with the audio script. Then I started using Google images instead of flashcards, then audio songs, then songs already including lyrics on YouTube videos, and I used this tool for a few years.

Later, the collision with the iPad happened ... t tell the truth, I had already seen them but had never used one. And then, they started training me in my job. The coordinator of the technology department was very patient and I asked many questions because she had to train me well to be able to answer all the questions of my students. I could not know less than them or allow them to know more than me, because that would cause me low morale, so I strived to learn and learn well to always be the one who knows the most and thus raise my image as a teacher.

Well, at the beginning I started using the iPad with a reading app, EPIC, and I really liked it a lot, because it included audio books with pictures, a dictionary within the readings, comprehension assessments at the end of each book and extra points if they finished to read the story within a specified time.

I have always liked recognitions, and I also passed on this to my students, because they also felt gratified by their points for having finished their readings.

At first I thought that using technology required great and deep knowledge, but I realized that by clicking clicking, and clicking, I would advance, and that a magic combination could reverse the mistake that I might have made: Z control.

So I developed and learned from my super technology coordinator, since she, within her seriousness and her facial stiffness, answered my questions and supported me.

Whatever technological course my coordinator offered, I took it and took advantage of it and from there I flourished in the use of many more apps that I enjoyed sharing with my students: Google translator, interactive dictionaries, Kahoot, nearpod, quizlet, Epic, interactive games in online, apple Keynote, seesaw with hundreds of ideas to play and evaluate, until one day something unexpected happened.

One day we were invited to a technology training course for teachers and the surprise was that everything they shared with us were things I was already doing with my students, and then I felt strong and highly technological. And so I kept implementing more and more apps, even having them on my cell phone and recommending having them this close to enjoy them and take advantage of them more more than we did... Having them as close as my own hands or fingers ... That they became part of oneself.

Actually the process of getting used to using them was very nice because the same school required us to use the iPad with some regularity, so I just flowed with the requirements of the school and well, also not being so confident and check that my students were working indeed with the indicated apps, since there is always a person who wants to see other pages and / or things that have nothing to do with education or the academic point.

The problem I had and still can have is the internet flow. If this is low, disappointment immediately appears both for students as well as teachers, then you have to know how to act in such a situation. In these situations we have to leave the activity for a better occasion ... But do comply, because credibility is highly important as a teacher.

To tell the truth, I never felt a conflict between the activities that I used to work with and the use of the iPad or new technologies, because I feel that I am a very flexible and open person. I also approached my colleagues in case of doubts or problems with the apps and they always supported me, and once again I saw that what for me at first might seem like a serious problem, again it was solved with a click, or two, or three .

If the world has changed, one must change along with it, otherwise, one would be out of reality.

I have definitely found many advantages with the use, not only of the iPad, but of all the technology that we can have at hand. I have made a turn of more than 250 degrees and I continue becoming more flexible, because technology takes us by the hand and is becoming more and more necessary to be able to keep up with the new generations and remain young, because the mentality and attitude of learning and training is what I feel, it keeps us afloat in the wonderful globalized world of teaching-learning.