8-2021

Implementation Of Technology In The Foreign Language Classroom

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IMPLEMENTATION OF TECHNOLOGY IN THE FOREIGN LANGUAGE CLASSROOM

By

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A DISSERTATION

Presented to the Affiliated Faculty of
The College of Graduate and Professional Studies
at the University of New England

Submitted in Partial Fulfillment of Requirements
For the Degree of Doctor of Education

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08/02/2021
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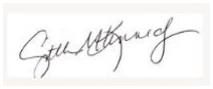
Lead Advisor Signature: 

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Date: 08/06/21

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ACKNOWLEDGEMENTS

I would like to thank my lead advisor, Dr. Cynthia Kennedy, for her dedicated support and guidance. Dr. Kennedy continuously provided encouragement and was always willing and enthusiastic to assist in any way she could throughout the research project. Also, Dr. Dawn Mackiewicz and Dr. Paul Roochnik who patiently supported me throughout this process.

I would also like to thank my research team, Andrew, Heather, and Zack, for their collaborative effort and support over the course of the last year. Many thanks to all participants that took part in the research and allowed this research to be possible. Finally, I would like to thank my family for supporting me during the compilation of this dissertation.

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Bashar Farid Al Saadi
August 2021
Educational Leadership

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ABSTRACT

The domain of foreign language learning (FLL) is critical to modern education because it allows learners to integrate with the global community in a meaningful way and offers a multitude of advantages to graduates and professionals (Akbar, 2015; Hampel, 2015). The intersection of technology implementation in foreign language education was this study's central area of interest (Carrio Pastor, 2016). This study sought to examine technology implementation in foreign language (FL) classrooms within the context of higher education. The study examined the views, opinions, and beliefs of FL educators about the role of technology in FL education and possible obstacles to technology implementation.

The goal of the study was to accentuate educators' views because they are the main factor in the process of education and are uniquely qualified to make judgments about the role of technology in FL. Two research questions guided the qualitative case study: (1) How do FL educators describe structural issues existing within the context of foreign language teaching that inhibit the implementation of technology? (2) What contributions (improvements, innovations) relative to technology do FL educators perceive as potentially beneficial? To answer these questions, data were collected with semi-structured interviews, focus groups, and the literature review findings. The data analysis process resulted in six primary themes: (1) Technology is a complement to the curriculum, (2) Using technology to reach a broader audience, (3) Using technology in class depends on motivation and expectations, (4) Training as a key issue for

educators, (5) The pace of technology development is a key issue, (6) Technology as a factor that limits interaction.

This study found that training appears to be a central point of concern for all respondents, and the evidence from the literature also points to this. Successful technology implementation necessitates institutional emphasis on training and resourcing that would support faculty throughout the process of implementation.

Keywords: *Foreign Language Learning, Technology Implementation, Education, Teachers' Perspectives.*

CHAPTER 1

INTRODUCTION

The domain of foreign language learning is critical to modern education because it allows learners to integrate with the global community in a meaningful way and offers a multitude of advantages to graduates and professionals (Akbar, 2015; Hampel, 2015). The modern learner must master skills to operate effectively in a global environment. Knowledge of the English language is one of these skills, as it is nearly impossible to navigate the technological landscape without it, especially in the developed world (Fregonese, 2017). Most global corporations use English as their language of choice, which further accentuates the need for effective instruction of foreign language (FL) learners (Fregonese, 2017). Finally, nearly 90% of all scientific literature in the world is produced in or translated into English, which makes it the de-facto lingua franca of the sciences. Clearly, every aspiring graduate or postgraduate student, as well as every researcher in the sciences requires a working knowledge of the English language (Suzina, 2020).

As a field of research, foreign language education has, over the past decade, been tied to the development of new methods and curriculum delivery models (Ortega, 2014). This was largely driven by the overall increase in interest in second language learning due to the accelerating pace of globalization and an unprecedented surge in the number of international students on the college campus in the United States (Carrio Pastor, 2016).

Learning a second language can exert a significant impact on the career prospects of individuals, which is why it is included as an important element in education in the United States and most other countries (Career Leads, 2005). The ability to communicate effectively is one of

the key elements in a wide range of fields that are vital for the operation of society, from diplomacy and politics to business and education (Akbar, 2015; Hampel, 2015).

The field of technology implementation in education, on the other hand, has been extraordinarily active over the last two decades (Carrio Pastor, 2016; Trilling & Fadel, 2012). The intersection of the implementation of technology in foreign language education is the main area of interest of this study for a number of reasons (Carrio Pastor, 2016). Technology, science, and business are now predominantly English-speaking fields, which means that any foray into one of these fields requires at least a working knowledge of the language. If the learner can also contribute a working knowledge of technology, or at least the fundamental understanding of how it works, their outlook improves dramatically (Carrio Pastor, 2016). According to Collins (2017), teaching technology and teaching by means of technology dramatically improves the skillset of learners, allowing them to enter the workplace better prepared and better able to tackle the challenges of a globalized world.

As stated by the United States Department of Education (USDOE, 2016), the development of a multicultural society is almost completely dependent on the ability to communicate and has a deep role in ensuring the domestic and foreign interests of the nation. Thinking outside of the borders of the United States (US), foreign language learning can be seen as a bridge that connects cultures and civilizations; therefore, it is not surprising that the field of foreign language learning has garnered significant interest in the US.

In lieu of the absence of technology in the field, studies by Liu, et al. (2017), Klimova (2017), and Tayan (2017) indicate that there is a gap in technology implementation between foreign language (FL) and other fields. This gap is largely attributed to a lack of technical expertise, support, and resources.

Statement of the Problem

This study examined technology implementation in a foreign language classroom within the context of higher education through the experiences of educators. This study focused on higher education specifically because of the increased demands placed on learners and teachers alike within the examined context. Hampel (2015) noted that there exists a significant discrepancy between the overall level of technological advancement and utilization in other fields of academia when compared to foreign language learning (Hampel, 2015). For the most part, the curriculum and the framework of the programs in this field are still based on antiquated approaches – such as chalk and whiteboard – that make very little or no use of modern technology. Considering the vast improvements in the field of Information Technology (IT) and communication over the last decade, this is both surprising and worrisome.

If foreign language (FL) educators are unable or unwilling to implement technology, this demonstrates the inefficiency of systems and the need for substantive change. If, however, educators cannot implement change due to systemic factors such as resourcing, lack of support, or other, the problem shifts towards administrative and curricular change (de Diezmas, 2018; Rokenes & Krumsvik, 2014). The discussion of these two concepts, however, was outside of the scope of this study, as the goal is to determine the underlying reasons for the problem rather than hunting for solutions for the problem as that undertaking far exceeds the time and resource constraints placed upon this study. While this may appear counterproductive, the current state of research is such that a study of this type is necessary to conceptualize and bridge the gap between theory and practice (de Diezmas, 2018; Rokenes & Krumsvik, 2014).

While technology does play a role in the learning process to some extent, the technology did not evolve out of any direct effort within the system. Rather, the use of technology at this

level can be seen as a natural evolution brought about by the tendencies of educators and learners themselves – the best example being mobile phone use, which has transformed into a unique piece of hardware that fulfills a number of roles, including learning assistance. Even with technology at their fingertips, most FL classrooms fall behind when compared to other disciplines, relying instead on well-established, but antiquated, systems of instruction (Liu et al., 2017). This gap makes instruction more difficult and poses significant challenges for educators mainly because of the changing role of educators in the classroom, from that of knowledge dispenser to that of facilitator of learning. With the amount of technology currently available to educators, including digital learning platforms, handheld devices, mobile applications, software, and hardware tools, the gap becomes all the more interesting and worthy of a research study. The three elements discussed in the study are indicative of the fundamental rationale behind technology implementation – ease of access, flexibility, and time saving. Technology-assisted learning improves student satisfaction, reduces the time needed to achieve proficiency, and perhaps most importantly, allows students to learn remotely (Ni, 2013; Nielson, 2011).

Purpose of the Study

The purpose of this study was to examine and understand how foreign language educators working at a premier higher education institution understand and describe the discrepancy between the levels of technology implementation in foreign language (FL) education and the current extent of technology usage in the field. Moreover, the study sought to understand how educators account for the structural issues that might inhibit the implementation of technology. Most notably, the site of the research was chosen because it has a high frequency of foreign learners so that the field of FL learning is significant enough to warrant such an examination. The emphasis of the study was placed on the experiences, opinions, and views of

FL educators through which the research seeks to understand and analyze the origin of the problem. Judging by the cursory unverified reports from colleagues and educators which were part of the reason for undertaking this study, this is because educators are the ones who implement technology or feel the absence of technology due to a lack of education materials, and subsequently, poor learning outcomes.

The study focused on FL educators working at a premier higher education institution, as their experiences can shed light on the proposed theme of the research and offer insights into the modalities of curriculum development.

Research Question(s)

RQ1: How do FL educators describe structural issues existing within the context of foreign language teaching that inhibit the implementation of technology?

RQ2: What contributions (improvements, innovations) relative to technology do FL educators perceive as potentially beneficial?

The answers to these questions were sought through the methodological approach of a qualitative intrinsic case study. The first question emerges organically from the literature and preliminary data from other studies. The second question relates to what innovations may be considered potentially beneficial to FL educators. These solutions may range from specific software or hardware demands (i.e. more computers and laboratories), curriculum (inclusion of mandatory multimedia and/or other technology), or simply to instrumentalize the already established mechanisms developed by educators so that they become available to others through official channels. Considering the gap in literature, uncovering perceived benefits to advancing technology in FL education will hopefully generate additional research studies and professional reflection among the stakeholders involved in this study.

The case study method was chosen because it allows the researcher to focus on the learning process through the experience of the educator (Merriam, 1988; Noor, 2008).This represents the optimal method for assessment as it allows the researcher to analyze the learning process itself as well as all the underlying factors that may influence the lack of implementation or failure to implement technology in the learning process (Merriam, 1988; Noor, 2008). The collected data offers a contribution to the understanding of the role of technology in the FL classroom, especially from the viewpoint of the educators as an established best practice in the field of foreign language instruction.

Impact

One of the issues that made this specific research project challenging is the absence of a large body of research that focuses specifically on the application and utility of digital technology in the field of foreign language (FL) learning. While the use of technology in mathematics or physics education is very well documented and the benefits are clear, the same cannot be said for foreign language learning, at least not in the same breadth. Examples from each field, such as Chong and Reinders (2020), Ellermeijer & Tran (2019), and Milner-Bolotin (2020) indicate a significant discrepancy in technology use and proficiency among these three disciplines.

The specific structure of FL learning, is comprised of the development of four linguistic modalities – speaking, writing, reading, and listening. The method of learning that was established in the 20th century has largely persisted due to the belief that the only way to learn a foreign language was to focus on each individual element (Beacco, 2011). For example, dictation was, and still is, considered the best way to activate comprehension and writing skills. What seems to be missing is a proactive orientation towards modern methods of communication

(Michael, 2018). One of the most effective ways to learn a foreign language is to engage with content that is readily available online, especially YouTube, various television and movie streaming sites (Netflix and similar), and through online applications such as Duolingo (Murphy, 2015; Ni, 2013).

The problem this study sought to understand is how the integration of technology may impact FL instruction. Therefore, this study examined how technology integration impacts FL instruction at the higher education level. The problem lies in the inability to translate the technological knowledge into classroom practice. Whether this is because of structural or other issues that prevent the implementation of technology remains unclear and is unlikely to be resolved in this study. However, just a simple overview of the literature indicates that existing non-academic and academic applications tend to outperform traditional face-to-face instruction (Murphy, 2015).

The impact of technology in FL education was examined in the recent study from Colombia. According to Chamorro (2018), Colombian experience with foreign language learning indicates somewhat better learning outcomes when technology is introduced into the classroom as compared to traditional face-to-face instruction. The improvements are not linked to statistically significant changes in test scores but rather in learning speed, increased flexibility for students, and higher satisfaction ratings by students.

Providing educators with the technological tools in the classroom, therefore, is not simply a matter of keeping up with the times but rather a necessity. Moreover, the emergence of online applications such as Babbel and Duolingo shows that technology can be used to facilitate foreign language learning in a fun and intuitive way, which could supplement the existing curriculum (Chamorro, 2018). However, some sources argue that excessive gamification in education leads

to adverse effects, a point that were examined further in Chapter 2 (Toda, et. al., 2017). Experiences from China, Colombia, and other countries that have adopted a more technology-based FL curriculum may shed some light on the issue and the challenges ahead (Baker et al., 2018; Chamorro, 2018).

Conceptual Framework

Conceptual frameworks are broad concepts that encompass the theoretical framework, topical research, and personal interest as foundations upon which the study is based (Ravitch & Riggan, 2015). As Ravitch & Riggan (2015) state, the choice of topic is frequently led by the situation, giving an example of an archaeologist who comes upon a dig site and has to formulate a research plan on the go without any theoretical support at the start. Personal interest can play a key role as it articulates what the researcher wants to investigate and offers a good starting point from which to formulate the framework. Finally, the theoretical framework elucidates the main elements and theories that could impact and guide the study (Ravitch & Riggan, 2015).

The original idea of this study was initially focused upon the analysis and critique of the process of implementation of Information Technology (IT) in FL education. However, this idea was refined as the search for the literature began, and even more so once the core issues in the literature began to emerge. The gap in knowledge within this particular domain of research is substantial, especially in terms of proper definitions, evaluation, and understanding of concepts and theoretical underpinnings (Chong & Reinders, 2020). Those studies that did focus on these elements, however, were largely oriented around practical applications rather than finding and analyzing the root causes of the inconsistent use of technology in FL education, such as Drevin and Kim (2019), Klimova (2017), and Liu, et al. (2017). Additionally, very few studies link implementation of technology with any of the widely discussed theories of leadership, or theory

of change, or the impact of technology on skill acquisition in FL education. This is particularly interesting insofar as change and proper leadership represent the two most salient elements of success in the modern business environment (Farahnak, et. al., 2020).

Leadership and change governance

Despite the many differences between education and business processes and methods, some core concepts apply to both fields (Poole, 2019; Swain & Swain, 2017). The discrepancy between theory and practice is evidenced by a growing number of studies that link various elements commonly found in business with some aspects of education, and vice versa. The interest in this topic came about from personal immersion with language and culture, but also because it became clear that there exists a substantial problem with modern FL education (Ode, 2011; Poole, 2019; Swain & Swain, 2017).

The failure to implement either new technology in FL education, or new models of education governance, is striking and evident at almost every stage within the system (Liu, et.al., 2017; Ode, 2011). It would seem that the over-reliance on theory in education research, especially in those areas of research linked to technology and integration of IT with the existing curriculum, is counterproductive.

The absence of a strong theoretical grounding with respect to technology implementation in FL learning corresponds well with the theory posed by Ravitch and Riggan (2015) emphasizing the need for a more grounded approach. The theoretical basis for most of the research conducted on the topic of IT implementation is derived from extensive education research theory; much of this, however, does not align with the specific elements of IT implementation under conditions where the use of new instruction methods do not satisfy the needs of the student (Carrió Pastor, 2016).

Here, it was clear that a more robust approach is needed, one that adopts and adapts several theoretical approaches in order to better understand the potential for change. The present study is a grounded attempt to determine the key factors influencing the success of the implementation of IT in FL curriculum. The theoretical basis for this study was rooted in change theory and leadership theory. The many aspects of change that are outlined in the literature review necessitate an approach that contextualize the factors which facilitate or inhibit technology implementation. Given that technology can and should be seen as an integral part of modern education, it stands to reason that at least part of the reason for its inconsistent application lies in the leadership within the field, to which end leadership theory must be utilized to analyze the structural factors underlying the problem (Fullan, 2006, 2008; Porter et al., 2016). While the implementation of the curriculum and the process of learning depends on the interaction between the educator and the learner, the role of organizational leadership is to ensure both groups have the necessary tools to maximize the value of the learning process. Within the context of FLL, absence or poor utilization of technology acts as an educational deterrent (Fullan, 2006, 2008; Northhouse, 2018).

Rationale and Significance

The research was positioned in such a way that it can simultaneously examine both concepts – technology implementation and structural factors that inhibit/facilitate technology implementation - and seek points of overlap where FL acquisition is directly dependent upon technology integration, or, determine if there exists no overlap between the two. The main point of interest is the discrepancy between the current state of implementation of technology in FL classrooms and the significant strides in technology development in other areas of academia. The central role in the research is given to educators, who are best positioned to observe, rationalize,

and understand the issues surrounding technology implementation and how such integration, or lack thereof might influence their ability to deliver instruction to learners. This is the reason why the study seeks to understand their experiences and opinions as the primary source of data for analysis. The limitations of previous research studies have been identified as overly focused on either the lack of technology implementation or the modalities of skill acquisition in FL learning, but seldom on the interaction between these two concepts (Garret, 2000; Ode, 2011). By examining the experiences of FL educators, this study seeks to understand both concepts better, and determine whether one affects the other, in what ways, and to what extent. Therefore, this research study seeks to fill a significant gap identified in the literature about FL learning and technology implementation in education from the perspective of educators (Garret, 2000; Ode, 2011).

Definition of Terms

The terminology used in this research study pertains mostly to the field of FL education, and, to an extent, concepts such as self-efficacy as they relate to the ability of educators to construct meaningful processes and learning packages.

- **Engagement** represents the willful and willing participation in an activity that promotes the acquisition of a specific goal (Skinner & Pitzer, 2012)
- **Linguistic competence** (LC) is a concept that outlines the understanding and working knowledge of a language that the individual is learning (Chimel, et. al., 2018)
- **Self-efficacy** refers to the concept of one's individual understanding of competence and skills that allow that individual to perform specific tasks or achieve goals they set for themselves. In terms of education, self-efficacy refers to the ability to engage with material, stay motivated for learning and advancement, and behave in a way that

facilitates these goals. For teachers, this refers to the ability to interact with students and impact their learning outcomes (Bandura, 1994).

- **FL education** refers to the process of language acquisition when the learner is not a native speaker of the language and has a working knowledge of another language that is considered their native language (Ortega, 2014).
- **Technology implementation** refers to the propensity of teachers, administrators, and policy makers towards the development of solutions that furthers the role of technology in any given field. In the context of education specifically, this refers to the ability to integrate technology solutions into the existing curriculum in a way that furthers the goals and outcomes of education for students (Poole, 2019).

Conclusion

In conclusion, this study sought to investigate the perspective of FL educators about technology implementation and external structural factors that may inhibit or facilitate the implementation and what the participants perceive as needed IT innovations or effective instructional practice. The study employs a qualitative intrinsic case study method which was selected to collect and analyze the experiences of FL educators. To this end, the study posits two research questions:

RQ1: How do FL educators describe structural issues that exist within the context of second language learning that inhibit the implementation of technology?

RQ2: What contributions (improvements, innovations) relative to technology do FL educators perceive as potentially beneficial?

A review of the existing literature indicates the existence of a significant gap in the understanding of the role of technology implementation and existing instructional strategies in

FL education. This study seeks to fill this gap by focusing on the possible points of interaction between the two. The main source of data is derived from the experiences of FL educators who are best equipped to shed light on the phenomenon and offer insight into the potential interaction that is being investigated.

CHAPTER 2

LITERATURE REVIEW

This literature review focused on the fundamental and theoretical aspects of technology implementation relative to foreign language (FL) instruction in higher education. Second, it examined the current knowledge and research regarding the implementation of technology, and possible outcomes of the technology-based curriculum in foreign language teaching. The review considers an in-depth analysis of technology implementation in the foreign language (FL) classroom. The review was done after using search terms such as “technology implementation”, “foreign language learning”, “IT in foreign language teaching”, and “technology use in foreign language”. These search terms were used on database search engines of journals such as *JSTOR* and *ingentaconnect*. The searches returned more than 1000 relevant papers and published research in this area. The findings from the literature review are presented in this chapter.

Studies by Ode (2011), Lam (2000), and Burnett (1999) emphasize the problem of inconsistency in the implementation of technology and offer compelling evidence for the root causes of such inconsistencies. Building on this research, more recent studies examine the specific elements of technology use in foreign language learning (Klimova, 2017; Tayan, 2017; Teodorescu, 2015) While many programs were developed and implemented, they approached the problem from a multitude of positions. The end result was always only partially positive or entirely negative. Programs were either implemented too early to capture the true potential of technology or were implemented without proper planning, which resulted in failure (NSFLEP, 1999; Ode, 2011).

The goal of this study was to set the groundwork for future discussions of recommended changes and adaptations regarding the introduction of technology in FL classrooms. This

includes positively impacting the mindset of teachers toward integration and utilization of technology in these instructional settings.

It is necessary to examine the teachers' perspectives on the issues, and how they would solve the problems or challenges related to technology implementation. However, the fundamental topical interest of this study is the experiences and opinions of FL educators regarding the problem of technology implementation in FLL (foreign language learning). The core of this segment will revolve around the idea that learning shapes the individual. This implies that the development of a new approach to learning by teachers (which is necessary for the successful introduction of IT) will probably result in different competencies among teachers. The competencies can be assessed objectively by collecting data on attitudes and perceptions about technology integration and implementation from FL teachers. The differences in competencies may play a role in the level and style of technology implementation in the classroom.

Problem statement

The process of implementation of Information Technology (IT) in the classroom, especially in foreign language education, has been ongoing for nearly two decades. At this time, there have been multiple iterations of programs that sought to integrate technology into the learning process (Ode, 2011; Vasiukovych, 2018). As Vasiukovych (2018) notes, some of these were partially successful, while others failed completely. This study will look at the experiences and opinions of FL educators with the goal of examining their perspectives on technology implementation and potential changes to instructional models that would facilitate such an implementation.

The Context

As Mayer (2005) points out, there is a big difference between learning aimed towards technology and technology aimed towards learning. In the former, the center of attention is on developing and mastering the skills to use the latest available technology. The main problem of this approach is the fact that it encountered several major setbacks during the early attempts of implementation in the late 20th and early 21st century, including lack of proper technological skills, expertise, lack of adaptability and inadequate technical support. The introduction of programs such as Computer-Assisted Language Learning (CALL) and others in the late 20th century showed promise, but the complete transition to IT supported learning models has not yet occurred (Day, 2013).

The second approach emphasizes the understanding of ways in which students learn how and when they use technology, and when is it appropriate to use technology to aid in the learning process. In this case, technology is viewed as a learning tool rather than an objective, and as such it is necessary to adapt the technology to educators' and students' needs, as well as develop the appropriate methods by which to integrate the technology into the curriculum. The onus of the study is, however, placed on the educators as they are the ones who must facilitate the change. Students, although a vital part of the education process, will not be the focus of the study (Sattler, 2004).

The significance

The topic of IT implementation is a broadly examined and discussed field (Poole, 2019). This study, therefore, does not seek to reaffirm the knowledge that already exists, nor does it try to find the solution to the many issues in and around this field of inquiry. Rather, this study strives to uncover available evidence in the hope of crafting a novel approach to the problem, one

that may, possibly, lead to the re-framing of some key issues and their further examination. Considering the lag in technology implementation, the present study will examine the opinions and experiences of FL educators on the issue as they are the ones who instruct students and are therefore the best equipped to tackle the issue presented in this study.

Review of the Literature

At the core of the discussion about the implementation of technology lies a more robust issue of competence. Above everything else, this literature review examines the ways in which teachers' approaches change in regards to technology implementation in FL education, more specifically to the process of merging traditional foreign language education with modern technology. This is in line with the gradual, but clearly visible shift in the methods and goals of education. It is no longer the goal of education merely to transfer knowledge, but rather to enable students to attain knowledge independently, and in this way, to gain competence and autonomy. To achieve this, then, it is necessary to examine what leadership traits, skills, or methods are necessary in public education, and how modalities of change interact with leadership styles (Lussier and Achua, 2015).

To achieve this goal, this literature review is divided into three sections. The first section will present the conceptual framework which guided this research. The second section will examine the predominant theories in the context of education. Finally, section three will bring everything together in a coherent discussion of the literature.

Conceptual Framework

A "conceptual framework" is a broad concept that encompasses the theoretical framework, a combination of the entire theoretical basis on which the study is based, as seen through the perspective of identified personal interests, including topical research (Ravitch &

Riggan, 2012). The original idea of this study was merely the analysis and critique of the process of implementation of IT in foreign language education. However, this idea was refined as the search for the literature began, and even more once the core issues in the literature began to emerge.

The gap in knowledge within research on technology implementation in FL is substantial, especially in terms of proper definitions, evaluation and understanding of concepts and theoretical underpinnings. For the most part, as the literature review shows, the research in this field has been extensive but also mostly theoretical. Very few studies have been conducted that link implementation of technology with any of the widely discussed theories of leadership, or theory of change (Tabrizi et al., 2019). This is particularly interesting insofar as change and proper leadership represent the two most salient elements of success in the modern business environment. Admittedly, education is nowhere nearly as simple or one-sided as business, but some core concepts apply to both fields (Premi & Geetha, 2020; Tabrizi et al., 2019).

The interest in this topic came about from personal immersion with foreign language education, but also stems from a clear observation that there exists a substantial problem with modern education. It would seem that the over-reliance on theory in education research, especially in those areas of research linked to technology and integration of IT with the existing curriculum, are counter-productive.

This corresponds with the theory of Ravitch & Riggan (2015) who emphasize the need for a more grounded approach. This research study is a grounded attempt to determine the structural issues that exist within the context of technology implementation, and the ability of educators to facilitate the process of technology implementation in a foreign language curriculum. The two broad fields, or topics, that were examined during the initial probing of the

material were the implementation of IT in foreign language instruction – of which there are many studies focused on empirical evidence from previous projects – and the range of curriculum options that could serve as a field for testing the integration. Through the review of the literature, several gaps were identified that have yet to be filled with strong and robust research projects, namely the criteria to be used in the determination of the validity of any single implementation project. Most of the projects conducted in the last two decades relied on arbitrary measures to determine outcomes and success of the implementation (Oliver, 2002), which is likely the main cause for such a massive rate of failures of said programs. The underlying issue when examining any change, or attempting to influence change, is the existence of deeply rooted practices within the system that are either completely resistant to change or attempt to resist change in any way possible (Fullan, 2006). The process through which this issue became paramount for the present study was neither straightforward nor easy to conceptualize in words. Through years of dedicated practice and personal involvement in the daily workings of FLL, I became enamored with the idea of broadening the horizon of FL education through technology implementation. However, as I began to investigate the issue from my personal perspective and that of my colleagues, it became apparent that there exists a broad chasm in terms of technology implementation. From this point, my interest for the topic grew, and it finally led to the development of this project, a thorough investigation of the systemic factors that influence technology implementation and the role that FL educators play in the process.

Change Theory

The main proposition of change theory is that it allows systems and institutions to facilitate change from within (Fullan, 2006; Fullan, 2007). As a theoretical concept, however, change theory is surprisingly fluid, perhaps because it encompasses a wide range of different

models, but also because it does not offer any structured foundation on which change can be implemented. This is both its main advantage and deterrent. Because of its fluidity, change theory is often used and interpreted incorrectly, which has a detrimental effect on the object of change (Fullan, 2006; Fullan, 2007).

A good example of this can be found in the contrast between one successful and one unsuccessful implementation of change in education using two different models. First, a study by Fullan (2007) found that one school district employed a more direct model of change by simply transplanting a set of standards and expectations from another system in an effort to raise productivity of the students. This was implemented without any thought to the specific needs of the students, the school, or the district and resulted in failure.

Another example was based on the fundamental elements of change that can be implemented in almost every setting – motivation, contextualization of the environment, and awareness of limitations. However, of the three, Fullan (2007) argues, motivation is by far the most important, as it impacts not only the students, but all parties involved. One of the fundamental aspects of change theory in education seems to stem from accountability. If the change is implemented in a way that can be rationalized and elaborated to the stakeholders, it is much more likely that the implementation will be successful.

However, to achieve this, the leadership structure must be both willing and able to implement the change. Of the many theories and models of leadership, transactional leadership seems to offer most in terms of a benefit-cost analysis for change implementation. Unlike some other types of leadership, however, transactional leadership seems to be predicated on the idea that in order to gain something, one must give something away (Farahnak et al., 2020).

In an educational setting, this would translate into a cohesive element that should, theoretically, mitigate the potential negative effects of change implementation, especially in high risk or low-performing schools. The balance between change and accountability must be maintained, which is the function of leadership, hence the need for a dual approach to the problem (Bush et al., 2019; Thien, 2019). Merely focusing on change, or on leadership, will not facilitate improvements, partly because this was tried before, and partly because the two represent the critical components of the process. Finally, motivation, if utilized properly, can be the greatest tool in the hands of a skilled leader, as it allows change to be instigated on all levels and across all stakeholders (Bush et al., 2019; Thien, 2019).

Approaching foreign language learning

The basic structure of foreign language learning can be distilled into three main elements – oral, functional, and task-based. In most cases, educators employ a combination of all three to deliver their message and to ensure students are able to participate in learning (Long, 2014). According to Cook (2013) FLL can be divided on the basis of focus – on synthetic and analytic. What this means is that the specific elements of FLL that are closely interlinked with the fundamental theories of learning (Richards & Rodgers, 2014), at the same time differ greatly due to the inherent complexity of linguistic structure and the factors that influence learners' desire to participate in the learning process.

As noted previously, disciplines within STEM and other fields adopted technology rather openly and rather quickly, while FL educators appear reluctant to take the additional step (Bucur and Popa, 2017). Despite the long-standing programs developed by the American Council on the Teaching of Foreign Languages (ACTFL) and the well-observed need to implement technology

across all levels of the academia, the situation has changed very little since the adoption of the National Standards in Foreign Language Education Project in 1999 (NSFLEP, 1999).

Technology is a major driving force in education for the 21st century. Sufficient time has been given for the implementation of new methods of teaching; after all, the early days of implementation can be traced to the late 1980s (Chong & Reindeers, 2020). However, despite the positive tone taken by Gonglewski (1999) about the future of FL in light of the proliferation of the internet as a learning tool, very little support can be found for such optimism.

One of the first and best implementations of technology into the FL curriculum was CALL (Computer Assisted Language Learning) which appeared in the 1960s as a project whose aim was to induce more rapid learning through behavioral, linguistic, and structural elements of practice. The underlying presumption was that learning happens at the crossroads of these three approaches, which resulted in the development of the now obsolete repetition system, where students would endlessly recite and repeat phrases in the target language in order to memorize them (NSFLEP, 1999).

The use of headsets in FL education was the first attempt of technology implementation in the FL classroom. Over time, as it became apparent that the repetition model was not effective, new approaches to FLL were adopted, many of which made use of one or more technological solutions. The individualization of FLL in the 1970s, for example, was one of the first attempts to introduce personal computers into the classrooms. Software solutions were developed to aid students in the learning process, and the use of technology was the key element of the curriculum. (Carrió Pastor, 2016). In the 1980s and 1990s, software, such as simulations, games, and audio programs – were included in virtually every commercially published FL program (Levy, 1997).

Finally, in the late 1990s and early 2000s, the development of the internet led to the development of a range of experimental programs and initiatives such as the International Email Tandem Network (IETN) which sought to make use of the communication aspect of new technologies to facilitate learning. While each of the programs envisaged and implemented through CALL was promising, much of what was done has become obsolete, or in many cases outside of mainstream application (Evans, 2009).

While it is true that technology plays a role in the learning process, this is not a consequence of direct and coordinated effort on the part of the educators but rather a natural evolution of a generation that was raised on technology (Wang, 2019; Williams, 2020). Today, most FL educators fall behind in terms of technology implementation as they seek to make use of time-tested programs from the 1990s and the 2000s while their students quickly adopt and adapt to new technologies (Wang, 2019; Williams, 2020). This gap makes the instruction more difficult and poses significant challenges for educators, mainly because of their changing role in the classroom (Wang, 2019; Williams, 2020).

Historically, teachers were the central point of the education process; they were tasked with the transmission of knowledge to the students. However, as Warschauer & Healy (1998) point out, the role of the educator has shifted to one of facilitation, where they no longer transmit knowledge, but rather instruct students on the best ways to find and make use of information. Within this new environment, traditional approaches to FL education seem antiquated and prevent students and educators alike from developing efficient teaching and/or learning practices.

Current State of Research

Language learning – best teaching practices

The process of language learning is complex as evidenced by the multitude of theoretical approaches that attempt to define and assess both the process and the methods used. As noted by Long (2014), the main distinction in the approach to foreign language learning is between synthetic and analytic frameworks, where the synthetic emphasizes linguistic units while the analytic emphasizes the subject, models of communication, and the underlying message that is relayed by the language.

A completely different approach is taken by Cook (2013), who differentiated between communicative, task-based, academic, and audio-lingual learning depending on the needs of the learner, their age, and existing level of language proficiency. Similarly, Richards and Rodgers (2014) found that FL learning must necessarily consider how and why the language is learned, meaning that different groups of learners will attain different levels of proficiency based on their underlying goals.

Moreover, FL learning seems to draw on a multitude of learning theories to explain the complex and frequently ill-understood process of language acquisition (Richards & Rodgers, 2014). The influence of behavioralism, constructivism, skill-based learning, theory of interaction, sociocultural learning theory, and others is well established within the corpus of FL learning research (Richards & Rodgers, 2014).

Re-evaluating instructional methods in higher education

Instructional methods in higher education are as diverse as the array of fields covered by modern education. Essentially, almost every discipline has a different set of instructional methods to achieve the goals of the program. English language and literature programs will follow a set of methods that differ vastly from those of a physics program. The research indicates

that the use of traditional instructional methods, such as teacher-centered instruction based on knowledge dissemination no longer supports the goals of education (Lee et al., 2017; Mackh, 2018). Historically, students were limited in their access to knowledge, especially in higher education, as their instructors were generally the only source of cutting edge knowledge, especially in highly competitive fields such as engineering and mathematics (Mackh, 2018). However, over the last three decades, the scientific and practical outcomes indicate that the optimal way to approach learning and education is from a student-centered perspective focused on the attainment of critical thinking skills. Essentially, students today have access to knowledge wherever they are, which means that the goal of education is not to transmit knowledge but rather to instruct students on how to access, obtain, analyze, and make use of the information they find online (Agarwal, 2018). To this end, instructional methods have evolved dramatically in some fields, especially in "hard" sciences such as mathematics and physics. At the same time, progress in less volatile fields (such as languages, social sciences, and humanities) has been far less obvious. Today, the vast majority of higher education programs offer at least some level of student-centered learning, but this depends heavily on the program and the institution. One might argue that language learning is in much less need of a radical instructional methodology shift, but this is not the case (Agarwal, 2018; Makh, 2018). According to Gilakjani and Sabouri (2017), one of the fundamental factors in shaping instructional methods, and one that is often overlooked, is the belief system of the educator. This does not pertain to any ideological dogma, but rather to the set of pre-existing beliefs, opinions, and experiences every educator necessarily develops throughout their life, which then plays a role in the formation of instructional methods. This is, after all, the reason why different types of educational strategies and approaches exist – every educator is different and approaches learners and the materials differently. Therefore, it is

important to examine the views and beliefs of educators to determine how they approach the classroom, instruction, and whether this ties into their views of technology implementation (Gilakjani & Sabouri, 2017).

Digital and technology participation – foreign language teachers' technology beliefs and implementation factors

As this study seeks to examine the beliefs and opinions of teachers about technology implementation, it is necessary to look at the underlying factors which make such implementation a necessity. Notwithstanding the significant benefits of technology implementation in terms of efficiency and time, the potential for online learning, and, similarly, the crux of the problem lies in the ability to properly identify the main driver of change that makes technology implementation critical in the context of FL.

Before anything else, the process of technology implementation relies on the assumption that technology offers a participatory instructional method by its very definition (Kim & Choi, 2018). What this implies, then, is that the implementation of technology emphasizes participation and better integration of the material. In essence, learners are empowered by technology to expand their knowledge through an active participation with, and in, technology. Moreover, technology is by definition participatory, meaning it enables active communication and collaboration (Kim & Choi, 2018). According to Gee (2010), participatory culture enables learners to become more than just listeners; it allows them to collaborate and exchange ideas within the group. Taking an active part in the learning process facilitates better learning and understanding.

The research on collaborative learning in the digital era is significant, but the two main elements to consider when deciding whether technology implementation in a FL classroom is necessary are the level of engagement and the impact of digital technologies on learning

(Martzoukou et al., 2020). There seems to be no significant difference between the level of language attainment between traditional and digitally assisted learning spaces, at least according to Martzoukou. The question, then, is why anyone would consider technology implementation if there is no difference in the results between effective use of technology and use of more traditional approaches (Martzoukou et al., 2020).

According to a study conducted at Cornell University, technology-driven collaborative learning facilitates better understanding and critical thinking, and allows learners to understand a variety of perspectives (Cornell, 2012). The implementation of technology, therefore, enables direct communication between peers, vertical communication between learners and educators, and enables learners to go beyond the curriculum and adopt new skills. The influence of technology on the process of learning is still not fully understood, mainly because it is an ever developing field, but studies show that learners benefit significantly from the introduction of digital skills and technology into the curriculum.

Some studies have noted that the main benefit of technology in the classroom ties into the specific set of skills needed to use technology effectively (Tayan, 2017). Simply having technology in the classroom or using it are not predictors of increased academic achievement. Rather, while technology does facilitate improved learning outcomes, inappropriate use – especially the problem of gamification – tends to hinder the educational progress. According to Toda et al. (2016), gamification pertains to the introduction of game-like concepts in technology used in academic, business, or other settings. This can be anything from introducing a point-based scoring system for class participation to award systems for students who perform the best. According to Toda et al. (2016), almost every IT integration in an educational setting has some form of gamification, as it is perceived to help students be more effective and attentive during

class. However, excessive or unplanned use of gamification has many negative consequences, of which the most important are loss of performance and development of negative interpersonal relationships within the classroom (Toda et al., 2016). While traditional scoring in education creates competition, the introduction of gamification, (especially leaderboards) tends to exacerbate in-class conflict as peers are effectively incentivized to compete (Toda et al., 2016). According to Drevin and Kim (2019), students and educators alike are aware of the potential negative effects of increased usage of technology in the classroom which further accentuates the need to carefully examine the views and opinions of educators in terms of technology implementation.

It emerges from research that whatever opinions or views about technology are expressed by the educators at the research site, the implementation of technology in the classroom remains rife with risks that must be accounted for. To this end, it is expected that at least some respondents raise the issue of negative effects of technology in the classroom.

Research by Tayan (2017) indicates that a large percentage of individuals in the 18 to 25 age bracket exhibit a strong interest to use their mobile or desktop devices for learning, especially language learning. The validity and effectiveness of mobile learning applications have been well established in the literature. Studies conducted by Jung (2014) and Teodorescu (2015) show that TEFL (Teaching English as a Foreign Language) applications have shown success among the target audience, are effective, and contribute to the permeation of technology in the field. Despite these findings, research by Lin et al. (2017) and Vasiukovych (2018) indicates that technology is yet to permeate the field of FL education in the same breadth as it does other fields. Reasons for this are many, but the main barriers are lack of technical expertise, assessment models, and support (Liu et al., 2017).

The push to use mobile applications in education is largely driven by their availability and ease of use by students who increasingly adopt new technologies. While educators do not necessarily use these applications, the level of interaction with technology exhibited by students today – more than 90% of the population in the developed world owns either a mobile device or a computer with high speed internet access – makes such applications nearly unavoidable. Knowing that young adults aged 18 to 25 are by far the most prolific consumers of technology products adds weight to the argument that technology use has significant potential in higher education (Elfeky et al., 2016; Pimmer et al., 2016).

In a paper on Computer Assisted Language Learning (CALL), Yanguas (2018) suggested that there is very scarce information on how technology is used in classrooms to teach Spanish. He suggested that both teachers and students can make extensive use of technological tools to teach and learn Spanish and supported the implementation of technology in language classroom. Owen and Demb (2004) discussed the productive strategies for implementing technology into educational programs of schools and Universities. The authors discussed a campus-wide program for implementation of technology to enhance teaching. They emphasized the importance of leadership among educators and how they adapt to technological changes in the classroom. In a paper on Task-based language teaching (TBLT), Lao and Li (2011) discussed how technology and task-based language learning are interdependent, and the challenges of teaching task-based language in a technology-mediated environment. The authors emphasized the mutual contributions of technology and TBLT to enhance language learning and technology-mediated classroom environments. Luke and Britten (2007) argued that current and future foreign language educators must be able to integrate technology successfully in the classroom to have meaningful and effective instructional practices. The authors called for a "realistic understanding

of the various functions, uses, strengths, and limitations of technology in education settings". For this purpose, they explained the expanding role of technology in education and emphasized increased research in technology implementation and development. The importance of technology implementation in teacher training and teacher education programs was also highlighted (Luke & Britten, 2007).

How educators use technology

The problem of technology use by FL educators was addressed through a battery of quantitative and qualitative studies that examined nearly every aspect of the issue and provided a sound basis for an examination of the problem. A study by Moore, Morales & Carel (1998) examined the use of technology on a sample of 338 educators across three levels of education – primary, secondary, and college level. The results of the study indicate that the propensity towards technology use in the classroom increases or decreases along three axis points – the education level of the teacher, the education level of the facility, and years of practice – and decreases along two axis – facility located in a rural area, and complexity of language. The last element was the most surprising finding of the study, whereby Japanese language teachers used technology more frequently than any other group across all axes, while those teaching more common languages – German, French, English – used technology much less frequently (Moore, Morales & Carel, 1998).

A study by Oda (2011) found that levels of technology implementation depended on the personal affinities of the teachers at least as much as other relevant factors identified in previous studies. This translated to the need to scrutinize the experiences and views of educators as the primary drivers of change in the classroom.

While the number of studies that investigated the implementation of technology in the classroom is significant, the studies outlined above represent four main factors that are necessary

to understand the interplay of different forces that either inhibit or facilitate technology implementation. Most of the work done thus far goes towards a common conclusion, that technology implementation in FLL represents a multifaceted phenomenon that depends upon a plethora of factors, and as such necessitates closer examination (Bucur & Popa, 2017).

The field of education research offers plenty of interesting and contemporary topics for research projects. The examination of the process of technology implementation in the classroom has been at the center of attention for quite some time (Wang, 2019). This is true of all subjects, but the theme that is of greatest interest to the present research is the implementation of technology in the foreign language classroom (Chong & Reinders, 2020). This problem is interesting for two main reasons – first, the apparent distance between foreign language learning and technology which makes the alignment of the two critical for education purposes in the modern globalized world. Second is the fact that past attempts to implement technology into the curriculum in general, and foreign language curriculum in particular, remain exceedingly uneven, ranging from failure to moderate success (Ravitch & Riggan, 2015).

Structural issues, training, and systems implementation

Considering the immense potential of technology, it is worth examining the potential impact of structural issues, barriers, and implementation obstacles in technology implementation in education. The pivotal work of Legget & Persichitte (1998) lay the foundations of a framework that allows for a close examination of obstacles to technology integration. The TEARS framework comprises five dimensions, time, expertise, access, resources, and support. More recent work in the field has, largely, supported these dimensions as being critical elements for technology implementation.

In cases where educators must coordinate technology use without any external support, time is a critical component as it limits their ability to formulate plans and generate ideas, expand

their skillset, or interact with students. Similarly, educators may lack the necessary expertise required for technology implementation, or be barred from access to the necessary technologies and solutions for implementation. Lack of resources pertains not only to physical or financial resources, but also the absence of systemic support within the education system. Finally, support pertains to technical, administrative, and general support educators require to implement and use technology effectively.

The first element to consider are external barriers, or those that exist outside of the classroom, and on which the teacher has no effect. As Ertmer et al. (2012) found, the level of institutional support and care for technology integration in education is growing, but deemed as unsatisfactory. The bulk of the criticism is based on inadequate resource support, where classrooms are ill-equipped to provide students with a modern learning experience.

The second greatest obstacle was identified as lack of institutional support for training and development for teachers, where the professional development pathways do not include dedicated technology training. This is a significant impediment, as it forces teachers to spend their already limited time and resources to pursue training in subjects that fall outside of their core duties. The earlier discussions about technology integration were mostly confined to availability of equipment in classes. However, more recent studies (Althoff & Leskovec, 2015; Gray et al., 2010) are more interested in structural support and training availability as the primary identifiable obstacles to technology integration.

According to Afreen (2014), schools and learning institutions have started using crowdfunding and other sources of funding to circumvent the often inadequate sourcing provided by the state or owners. This trend emerged among teachers who frequently run crowdfunding campaigns to buy equipment for their classrooms. Moreover, in some schools a Bring Your Own

Device (BYOD) programs exist, which rely on students to provide technology used in the classroom, an approach that does not yield positive results in low income districts (Afreen, 2014).

Training is a critical component of the technology implementation process, as Ertmer et al. (2012) and Stukalina (2011) single out absence of training as the single most important barrier for technology implementation. While the level and quality of training available to educators differs based on region and nation (significant differences exist between the US, the EU, and among various EU nations as well as US states), both studies find clear deficiencies in training availability. However, evidence presented by the National Education Association (NEA) (2008) shows increased rate and frequency of usage of technology in education, as well as teachers' ability to use technology. However, no indication is provided whether these increases are due to individual or collective actions.

One of the inherent problems of technology is the fact that it is always evolving, which means training received a year ago may not be sufficiently advanced to facilitate a contemporary learning experience today. This was confirmed by Gray et al. (2010) who found that while most (88%) teachers were happy with their training (80% of all teachers reported at least some training occurred), the reported length of training was between 1-8 days. Moreover, nearly 70% of all respondents indicated that the main purpose of their training was to cater to administrative tasks, research, or other non-instructional duties.

Moreover, the availability of training was found to vary significantly across different levels of education, institutions, and districts. In most cases, as Stukalina (2012) reports, higher education has greater availability of training but largely oriented towards non-instructional tasks – such as research and administration. At the same time, primary and secondary education are

severely limited in funding, especially in low-income districts, which decreases availability of training and professional development. Overall, Stukalina (2012) notes that the current levels of training and its quality in higher education are insufficient to support a broader technology implementation program, as many educators lack the skills necessary to use technology in instructional purposes.

Conclusion

It is clear that the introduction of new technologies in a learning environment necessitates a lot of careful deliberation and planning as well as development and testing. This is an inherently multidisciplinary process that includes all facets of the education system, from teachers and administrators to students and parents (Hartley, 2007; Lim, 2007). The literature review reveals that integrating technologies in foreign language education not only creates an interdependence between language and technology (Lao and Li, 2011), but also builds a technology-mediated environment that is largely conducive to teacher skills training and enhanced learning and teaching practices (Luke & Britten, 2007).

The role of the teacher, therefore, is pivotal in the development of a technology-based or technology-supported curriculum. The roles in the process include the evaluation of Information and Communication Technology (ICT) tools, evaluation of students' ICT competences, establishing clear expectations, and creating tenable goals so that the students can be properly motivated throughout the learning process (Lim, 2007).

CHAPTER 3

METHODOLOGY

The purpose of this study was to explore how foreign language teachers identify and describe technology implementation in foreign language education in college and university settings. As the body of literature indicates, the integration of technology as instructional tools appears to be lacking, and this gives way to the second research question. Moreover, the study investigates how educators account for the structural issues that might inhibit the implementation of technology.

The process of implementing IT in foreign language education has been ongoing for nearly two decades, but has been limited in scope and remains far behind the standards found in other classrooms (Ode, 2011). This period has seen multiple iterations of programs that sought to integrate technology into the learning process. Some of these were partially successful, while others failed completely (Ode, 2011).

The methodological approach this study utilizes is a qualitative intrinsic case study approach. This study seeks to examine the role and experiences of Foreign Language (FL) educators and draw parallels to the concept of technology implementation as a way of improving the process of education (Crabtree & Miller, 1992; Merriam, 1988). Qualitative research is generally more widely used in the field of social and education sciences precisely for the reasons noted above (Creswell, 2003; Silverman, 2016). The choice of a qualitative approach was made with the specific nature of the phenomenon in mind.

Research Questions and Design

This study sought to explore the following questions:

RQ1: How do FL educators describe structural issues, existing within the context of foreign language teaching, that inhibit the implementation of technology?

RQ2: What contributions (improvements, innovations) relative to technology do FL educators perceive as potentially beneficial?

The qualitative methodology encompasses within it a number of different designs. The choice in the case of this study was limited to three designs, the ethnographic, the phenomenological, and the case study. Each of the three methods has its unique features, but phenomenological research is often described as overly subjective in nature which would not suit the needs of the present study (Lowes & Provse, 2001), whereas the ethnographic method limits its research focus on people to the detriment of phenomena. In the case of this study, following the ethnographic method would require focus to be placed solely on the teachers and their opinions while disregarding the theoretical underpinnings and knowledge found in the literature (Androutsopoulos, 2008). For this reason, a case study method was chosen as the one with the best balance, focusing equally on experiences and the effects of the phenomenon (Cresswell, 2003; Merriam, 1988).

Case Study

While it is true that case studies are frequently conducted using quantitative data collection methods, their scope is broad enough to be used, equally effectively, in qualitative research. The reason for this is that case studies offer the ability to treat individuals, groups, or events within a defined context (Baxter & Jack, 2008; Merriam, 1988).

This study used an intrinsic case study methology, which is based on the specific nature of the research question and a relatively limited sample size (Zainal, 2007). The intended participants are FL educators working at a higher education institution, where their experiences

and insight will provide the crux of the data for the analysis (Baxter & Jack, 2008; Merriam, 1988).

The case study model was chosen because of its ability to focus on issues that pertain to the individual and the group at the same time. Considering the underlying questions of the study, it was necessary to investigate the problem from the perspective and experiences of FL educators as individuals and thematize the problems within the context of the group. While generalizations based on a small sample in qualitative studies can be an ungrateful task, the triangulation between the results of the data analysis and the literature will, hopefully, provide sufficient context to allow generalizable statements to be made about the problem (Baxter & Jack, 2008; Zainal, 2007).

Site Information and Population

The study was conducted in one of the largest foreign language institutions in the US, with an annual enrollment of new students exceeding 3500. This site was chosen due to the high frequency of non-native speakers and the correspondingly high number of educators who work in foreign language acquisition. The majority of the courses are interdisciplinary, which implies that educators must be able to reach into other areas of competence to create successful programs (Garrison & Vaughan, 2008).

The site will be referred to as ALL (Academy of Language Learning) within the context of the study, mainly to preserve the confidentiality and privacy of the respondents and ensure the confidential nature of research. Each instance of documentation where the researcher will include official documents or information from the site was screened and all personal names, institution names, and other information that might reveal the location of the site was removed. The study will also include a small fraction of personal correspondence of the researcher, which

was screened and all personal information removed, so as to protect the identity of the individuals referenced in the file.

As an accredited FL institution, the ALL offers a variety of learning opportutnities for students and educators, and is constantly engaged in projects that seek to expand the availability of FL learning to students.

Technology has become the backbone of the modern education process in some disciplines – for example mathematics, physics, and other STEM fields - and many programs and teachers apply it successfully and consistently in their practice. The reason why some fields are seemingly more attuned to technology implementation can be found in their specific nature – mathematics and STEM field in general are oriented towards logical reasoning and systems, which is why technology seems to complement them rather well (Cavas et al., 2009).

Sampling Method

The respondents were selected using a convenience method, a type of non-probability sampling that is used when random selection is not preferrable due to limited number of respondents. In most cases, convenience is used in studies with a limited number of potential participants or in cases where the pool of participants cannot be randomized. The range of participants for this study was limited to FL educators from a single institution, which further adds to the credibility of convenience as the best method for this study. As the scope of the study includes only one small segment of the population, FL educators, convenience sampling was chosen as the most appropriate method (Etikan et al., 2016) . The respondents were recruited among the employees of the institution through convenience sampling (Tongco, 2007).

The criteria for participants are that each person selected were over the age of 18, employees of ALL who is certified in the content area that they teach, and have at least two years of teaching experience in higher education.
(Crouch & McKenzie, 2006; Robinson, 2014).

As indicated earlier, the goal of the study was to understand the underlying structural issues with respect to technology implementation in FLL and the ability of educators to contribute to the process of technology implementation. The target group of respondents were selected on the basis of their familiarity with the field. In other words, respondents have to be actively engaged in FLL in some form, preferably as educators.

The number of individuals available that fit the criteria is around 40-60 for the entire instution. Taherdoost (2016) suggested around 50% of participants can be expected to either not respond or refuse to participate, which leaves between 20-25 respondents (Taherdoost, 2016).

Additionally, some withdrew later on in the study, so the total number of respondents was expected to be between 8-14. After the completion of the first rounds of this sampling method, it was expected that the resulting participant group will comprise at least 8 individuals. The total number of respondents who agreed to participate was 10.

Instrumentation and Data Collection Procedures

Case studies allow for a broad range of data collection methods, from surveys and questionnaires to interviews and focus groups (Elman et al., 2016; Harrison et al., 2017). Data collection for this study was conducted using three methods: interview, focus group, and a member check informant feedback system. As Charmaz (1990) argues, qualitative studies are generally interested in how something works, or why it is happening rather than trying to quantify the problem. Because of this, qualitative research allows for almost any number of

participants, from as few as one in observation studies, to several hundred in larger studies. The number chosen for this study is based on the scope of the study itself, and the fact that the number of adequate candidates ranges from 40 to 60 at the chosen institution, which means a sample of 8-14 respondents was adequate (Baxter & Jack, 2008; Jansen 2010; Vaugn & Turner, 2016).

A focus group is a data collection method frequently used in qualitative studies, which aims to disambiguate themes and threads of data collected from other sources (Edmunds, 1999). In the present study, the focus group was conducted in two rounds, with approximately 4-7 participants in each round, after the interviews have been concluded and analyzed. Each respondent will, therefore, participate in one interview and one focus group. The goal of the focus group was to pinpoint the themes that will emerge from the interviews and discuss them in a group setting. The interviews were recorded, and the data transcribed, coded, and analyzed to detect any recurring themes or ideas among respondents. The interviews were held online using either Skype or Zoom, which will limit contact between respondents and the researcher and make the process much simpler and faster (Crouch & McKenzie, 2006,; Robinson, 2014). The use of focus groups in qualitative research allows the researcher to engage in discussions with participants that can explore emergent themes in depth and from various perspectives. It is a commonly used method in qualitative research, and is largely pointed towards an analysis of participants' beliefs, opinions, and values. Depending on the scope and type of research, focus groups can be utilized in any number of ways, from purely descriptive studies to thematic analysis and beyond (Carey & Asbury, 2016). Each focus group discussion was transcribed using a transcription software, and the verbatim transcripts reviewed so that any themes that emerge can be contextualized within the existing conceptual framework. In short, after themes are

identified, the researcher will examine them through the lens of existing literature and mark those which correspond to an existing body of knowledge. The method utilized was open-ended conversation, where the moderator (the researcher) will propose a theme and then record the ensuing discussion. Each focus group was expected to analyze between 3 to 5 themes and last anywhere from one hour to one hour thirty minutes. The focus groups was used as a contextual check of the thematic analysis and a member check to ensure no bias is included in the interpretation of the results (Crouch & McKenzie, 2006; Robinson, 2014). Thematic analysis is a broad field within qualitative research that seeks to discover, unravel, and analyze themes from the data gathered in the research process. As the researcher collects participants' responses, the data are analyzed to find commonalities in the answers provided. These, then, form themes which can be used for further analysis. Each theme comprises a set of value statements or views that are held by more than one respondent, and can be used to compare with the literature (Clark & Veale, 2018).

The participants were asked to partake in one semi-structured interview composed of ten questions. The questions are based on the site and domain-specific elements and include a series of questions designed to gauge the respondents' overall level of understanding and affinity towards technology implementation. Each participant was allocated approximately 40 minutes for a one-on-one interview, and given the same set of questions. (Crouch & McKenzie, 2006; Robinson, 2014).

The main methodological choice that has to be made is between structured and semi-structured interview. Unstructured, or open-ended interview would not be suitable due to the specificity of the research question and approach, which leaves either the semi-structured or structured options. While structured interviews allow the researcher to narrow the scope of research as much as

possible, the fact that the study is based on an intrinsic case study method points to the need for direct input from the subject. To this end, semi-structured interviews offer sufficient depth of analysis and allow respondents to interject new data points for the analysis and therefore represent the optimal choice for the study (Crouch & McKenzie, 2006; Robinson, 2014).

Data Analysis

Each interview was recorded, transcribed, and then coded (Creswell, 2003; Merriam, 1998). The list of codes was obtained using a data analysis software Nvivo and used to isolate themes and emerging patterns. Trends, keywords, themes and patterns were identified from the qualitative data analysis software process. (Creswell, 2003; Merriam, 1998).

The transcription process was outsourced to a third party. The company that provides transcription services is frequently used by researchers and includes a mandatory non-disclosure agreement (NDA) in their service package. This ensures that the data collected in the study will never be shared, sold, or otherwise distributed without the express permission of the rights holder – in this case, the researcher. The use of a third party service is desirable due to the volume of data involved so that the researcher can complete the study within the timeframe originally set forth. The coding process was thematic, meaning each interview will be analyzed and emerging themes isolated (Creswell, 2003).

The coding process was based on the proposition made by Creswell (2014) that the analysis of data can be reinforced by the literature review. To this end, the coding process will probe every response and isolate the phrases and topics. The coding allows for a much clearer approach to the topic and the distinctions that emerge from the literature. After every isolated topic has been coded, they were grouped together under themes. Each theme represents a group of topics centered around the same central idea – for example, if four respondents state that their

curriculum could be improved by equipment, this was isolated within a theme called "Equipment" or similar. Once the themes have been isolated using the coding software, they were analyzed and interpreted within the context of the literature and existing body of knowledge to determine wheter they add significance to the study (Cresswell, 2014). The literature review is a part of the data analysis process as a third element for triangulation, which will maximize the validity and credibility of the findings.

Limitations of the Research Design

Each research study has limitations that emerge from its design, the chosen methodology, or lack of data. The main goals of research are objectivity, or the ability to present the findings fairly, objectively, and without bias. The presence of limitations places constraints on these goals and can, if not accounted for, skew the findings, leading to invalid results (Queirós et al., 2017).

The often-cited weakness of a qualitative research method is its dependance on subjective narratives and lack of objective data to back up the claims made by the researcher (Noor, 2008). While this is true to an extent, it is by no means indicative of the overall weakness of the approach. On the contrary, qualitative methodology offers a unique perspective into the experiences, views, beliefs, and opinions of individuals (Noor, 2008; Robinson, 2014). The gap in the literature pertaining to the discrepancy in technology implementation, lack of theoretical foundations and broad studies in the area of FL indicates a significant limitation for this study, as much of the data will have to be based on a limited range of available sources. Potential bias emanating from the researchers' views and the views of the respondents may pose problems. However, considering the goal of the study is to analyze the experiences of the subjects in respect to the phenomenon, any bias must necessarily be included in the analysis (Jansen, 2010; Robinson, 2014). As Miller et al. (2009) point out, the power dynamic must be considered

because the researcher might have the ability to influence the participants and the process itself, because the site of the study is also the researchers' place of employment.To mitigate the issue of power dynamic and possible interference, the researcher will use reflexion and introspection (Durkin et al., 2020). One of the main vulnerabilities of the chosen data collection methods is the subjectivity of the respondents. If the participants fail to respond, the study may yield inadequate results. Moreover, participant engagement is critical for the ability of the researcher to analyze the responses with the secondary literature or data published on similar research. The interview method is especially sensitive to participation and willingness of the respondents to engage with the interviewer (Jansen, 2010; Robinson, 2014).

It is recommended that the data collection be done in the presence of the researcher. In the case of participants missing the interview, they were asked to respond to the interview questions in written form, but this would have deterred the study significantly, especially if a large number choose not to attend As a backup plan, data collection can be done online via email or Skype and this will better enable all participants to attend the procedure. (Jansen, 2010; Robinson, 2014).

The main anticipated delimitations of the study were sample size, place, and population traits. Because respondents must be selected from a specific and very narrow group (FL educators), there was no possibility of a random sample.

Credibility

The credibility of the study will depend, for the most part, on the ability of the researcher to mitigate any personal bias and/or presumptions before the conclusion of the study. The goal of every study, including this one, is to connect the findings from the data analysis with those rooted in existing scientific knowledge whilst limiting researcher bias (Twinning et al., 2017).

This is especially a threat in the process of data analysis and coding, where the responses provided by the participants can be misconstrued or contextualized differently based on the researchers' own assumptions.

One of the strategies used to prevent bias from affecting the development of themes and raising issues, is member checking. Here, the researcher will convey the list of themes presented to the respondents in each focus group. The members were asked to assess the themes based on the discussions raised in focus groups and flag any themes that might have been misunderstood or misrepresented. In qualitative research, the "member check", is known as participant validation. It is used by researchers to help improve accuracy, generalizability, and transferability of a study. Having external verifications of the themes from participants of the study adds validity and credibility, while also removing any possibility of researchers' own biases and/or preconceptions (Creswell,2003; Merriam, 1998).

Further, triangulation of the findings was conducted through a careful analysis of the existing literature and data available from secondary sources, and its comparison with the findings of the study. Qualitative research, and case study especially, depend on triangulation and member checking to ensure credibility of the findings, since the number of respondents and specific methodological constraints do not allow statistical or other data-based comparisons. A methodological triangulation between the interviews, focus groups, and the literature review ensured that any weakness of one data collection method is offset by the others, thus increasing the overall validity of the research (Creswell, 2003; Merriam, 1998).

Ethical Considerations

The main ethical concern related to the study was the protection of privacy of the respondents, and the selection of the site of the study – the researchers' own institution. This was

addressed by providing each participant with a consent form in accordance with Institutional Review Board (IRB) guidelines, removing any identifying information from the transcripts – replaced with serial numbers for each respondent – and complying with the IRB requirements as set out by ALL, the institution at which the research will take place. Once the proposal for research and the site is approved, the researcher will acquire written consent forms from respondents chosen to participate in the study and keep them stored (Baxter & Jack, 2008; Crabtree & Miller, 1992).

Moreover, all the responses collected from the participants was used only in the process of analysis pertaining to the chosen research question. Any other information not pertinent to the study was not used in any way. This is especially important as the participants are all university level educators, meaning their work and teaching methods were not the subject of inquiry. Each participant was free to withdraw from the study and not be included in the data analysis if they choose not to be (Baxter & Jack, 2008; Crabtree & Miller, 1992).

The sample for this study is one of convenience, meaning the researcher may already know several respondents. To ensure credibility, the member checks will be conducted by all participants, else bias might play a role (Baxter & Jack, 2008; Crabtree & Miller, 1992). To achieve a power equilibrium, a researcher should remain as open and forthright about the study whilst refraining from excessive data sharing that might jeopardize the study. Giving the participants too much information is, possibly, as damaging as not giving enough, which is why a balance will have to be found to delineate when and where to share information.

Conclusion and Summary

An intrinsic case study was utilized in this study as it allows the researcher to best capture the experiences and opinions of the subjects pertaining to the object of the research,

implementation of technology in an FL learning environment. Two research questions form the basis on which the methodology is constructed:

RQ1: How do FL educators describe structural issues, existing within the context of foreign language teaching, that inhibit the implementation of technology?

RQ2: What contributions (improvements, innovations) relative to technology do FL educators perceive as potentially beneficial?

The choice of data collection methods was based on three factors: time, availability, and specific requirements of the chosen research question. Semi-structured interviews and focus groups were used to collect the data from respondents. The study included a literature review as a third and supplemental data collection method. As it stands, the study includes respondents based in a higher learning institution in the US, all of whom are FL educators. Although it would be much better to choose participants randomly and possibly create two groups, the specific nature of the phenomenon necessitates respondents be closely linked to the subject matter. This, in turn, requires selection of candidates who meet specific criteria. Credibility of the study was addressed through member checking and triangulation derived from the conceptual framework and prior analysis of available scientific literature on the subject. Ethical norms were addressed through IRB provided consent forms and censoring of participant's private information before the coding process begins.

Summary

The methodology chosen for this study is based on the need to analyze and interpret the data collected from the participants. Considering the limited scope of the study, the use of large scale data collection methods was deemed inappropriate. Instead, the study utilizes a case study method based on semi-structured interviews, focus group discussions, and literature review. Each

of the three chosen data collection methods is well suited for case study research, and more importantly for small sample research. The use of convenience sample is appropriate given the small pool of potential participants and the fact that the research is conducted in a single site. This study seeks to explore the following questions:

RQ1: How do FL educators describe structural issues, existing within the context of foreign language teaching, that inhibit the implementation of technology?

RQ2: What contributions (improvements, innovations) relative to technology do FL educators perceive as potentially beneficial?

The data is collected using interviews and focus groups with the purpose of isolating themes and key topics that can be analyzed and from which generalizable statements can be made. The overall concept of the study is limited by the identified gap in the literature and the constraints of the chosen methods.

CHAPTER 4

FINDINGS

This study examined the perceptions of faculty members regarding technology in higher education foreign language classrooms (FL) classrooms. The questions guiding the research sought to understand how FL educators describe and understand the structural issues within the context of foreign language teaching that impact the implementation of technology, and what contributions (improvements, innovations) relative to technology FL educators perceive as potentially beneficial.

To achieve these goals, a qualitative intrinsic case study approach was utilized in which data were analyzed using semi-structured interviews and focus group discussions. The sample comprised faculty members from the designated research site, all of whom are FL educators. The analysis of the collected data was conducted using the narrative analysis of emergent themes, an approach that is fundamentally and methodologically aligned to the data collection methods (Cresswell, 2003; Silverman, 2016).

The group of participants were selected from the group of faculty members who were employed at American Language Learning (ALL) using the criteria discussed in Chapter 3. The researcher used focused groups which comprised of the same participants who engaged in one to one interviews. The goal of the focus group was to further enrich the data collected in the interviews. Then, as themes began to emerge, this information was discussed within the focus groups in the context of answering the research questions. The study was conducted in one of the largest foreign language institutions in the US, with an annual enrollment of new students exceeding 3500. The study aimed to determine what structural issues existed that may impede or

improve FL teaching in the context of technology implementation, and to ascertain the benefits of specific types of technology to the learning process as understood by educators.

Thematic analysis

This section will first outline the results of the interview section as they pertain to the usage of technology and other aspects of technology-assisted curriculum. This will be followed by a narrative analysis of the interviews and the themes isolated during the analysis. The final part of this section will analyze the results of the focus groups.

The analysis of the interviews yielded several key terms and phrases that were shared by several participants. These were (a) technology integration process, (b) obstacles to technology integration, (c) how to use technology in education, and (d) experience with technology. These terms and phrases underline the main themes that emerged from the research (Table 2) but were conceptualized as broader issues that did not pertain to the daily experiences in the classroom.

When these terms are contextualized from the viewpoint of technology integration, several subcategories emerge–the role of motivation, teacher engagement, interest in technology, availability of training, impact on learning, impact on assessment, technology as a tool, and technology as an obstacle to learning. The interview responses indicate that these categories and contexts represent the most abstract way of conceptualizing technology implementation, whereas the emergent themes indicate a more robust understanding and approach to technology on a daily basis. Participant D, E or F responded on the question pertaining to the use of technology in the classroom. Their responses indicated how technology was a central element in the education process, irrespective of the perceptions of educators.

For example, contemplating the motivation of teachers to use technology is a higher level of analysis than focusing on the existing level of experience necessary to actually use technology in the classroom. To this end, the study treats these varying levels of contextualization differently. The subthemes are approached as a way to conceptualize the daily practice and difficulties in the classroom as they pertain to technology integration, whereas the themes themselves are approached as possible pathways towards bridging the technology gap.

Setting, Themes, and Respondents

With a qualitative intrinsic case study approach, the researcher simply lets the narrative unfold, and then tries to connect the isolated narrative themes with the existing body of literature. When combined with triangulation, as described previously in Chapter 3, this creates a solid methodological foundation that can provide interpretation and generalization that is both valid and grounded in evidence (Merriam, 1988; Silverman, 2016).

The interviews were conducted in a relaxed atmosphere, and the respondents were amenable towards expanding their views and statements. Because the interviews were designed as semi-structured, the questions served mostly as a starting point for what, in most cases, turned into a broader narrative between the interviewer and the interviewee. Descriptions and opinions provided by the respondents were detailed, nuanced, and as expected, focused predominantly on their individual experiences with the phenomenon. A full list of interview questions can be found in Appendix 1. Table 1 offers a list of pseudonyms given to individual respondents to make the following discussion more understandable.

Table 1

Respondent Coding and Pseudonyms

Respondent identifier	Pseudonym
A	Parker
B	Jordan
C	Charlie
D	Ryan
E	Sam
F	Alex
G	Taylor
H	Kennedy
I	Drew
J	Avery

Six main themes were identified through the coding process. Some codes appeared in two or more cases, with four codes identified across more than four interviews. Table 2 illustrates the six themes and individual responses discussed next depict how the results of thematic analysis occurred.

Table 2

Emergent themes

Sequence	Identified theme
1	Technology is a complement to the curriculum
2	Using technology to reach a broader audience
3	Using technology in class depends on motivation and expectations
4	Training as a key issue for educators
5	The pace of technology development is a key issue
6	Technology as a factor that limits interaction

One such example of a code that appeared numerous times was the expectations or interest of students regarding utilization of technology in foreign language learning. To this end, Parker discussed how students often expect certain technologies to be used, which in turn affects how the interviewee prepares the curriculum and interacts with the class. Ryan contemplated how students who are interested in technology often bring up the topic in class, and this motivates the interviewee to engage with them and the topic. Yet Jordan commented on the high interest of students for technology, especially how it pertains to class use, which in turn motivates them to include technology in the curriculum.

Technology is a complement to the curriculum

The results section touches on the concept of using technology for education. The respondents were questioned about their use of technology, and their perception of the use of technology, or whether they could differentiate between the two. Two categories emerged from the responses–positive learning environment and assessment.

When asked to clarify the meaning of *learning environment*, respondents provided a variety of answers, ranging from developing online lessons and materials, to grading practices, email correspondence, and others. Most prevalent were the answers that cited Covid-19 as a major contributing factor to their increased rate of usage. Kennedy commented that they were grading assignments and posting them online using the Blackboard grading feature, something "that I never did before. I just prefer manual grading, especially for written assignments." However, Parker, Jordan, Charlie, Ryan, and Sam commented that technology made it easier to communicate with students, especially about their grades and achievements. By posting grades and comments online, they stated, the students were more likely to react because the information is "right there, it's very visible and cannot be obscured."

In terms of assessment, four respondents commented extensively on the increasing prevalence of online learning and the different methods of assessment that exist for online learning. Drew and Avery noted their difficulties adjusting to this model, but four respondents stated online assessments were much better and more transparent. However, three respondents expressed concerns about plagiarism, cheating, and other dishonorable practices that were, according to them, much easier to do when there is no physical proctoring or interaction. Drew stated: "how can I know if a student is cheating when they're nothing but a blip on a screen. I don't see them, they don't see me. I have to hope they have integrity and will not cheat, which I know from experience is not always the case."

Using technology to reach a broader audience

The rate of usage and understanding of technology varied significantly among respondents, ranging from very poor to very good and beyond. Parker detailed the use of tablets and iPads in the classroom as a way to boost student activity and increase participation. Parker asserted that she found several applications that allowed her to create queries and interactive questionnaires and share them with connected devices. Further, Parker stated that he just encouraged students to use their own devices in class due to poor equipment. Moreover, Parker looked at apps and programs to use in class as students seemed to be more interested when technology was involved.

From Parker's point of view, it emerges that technology was used as a complement to the standardized lesson plans. Whenever the class finished with a lesson, they would take out their tablets and answer the questions projected on the screen. Parker noted that these were the most productive classes when almost all of the students were active and joined the activities.

When asked directly, all of the respondents believed technology was inherently a positive element in the classroom, and one that can improve learning outcomes for students. The optimal route to achieve technology integration and utilize it to improve the learning experience, however, was a matter of some disagreement between the respondents. Six respondents expressed belief that the best way was to focus on training and knowledge of educators, whereas three believed that technology in itself was not a factor, but rather the motivation for students to perform better. Taylor put this in perspective by **s**tating: We as educators need to facilitate motivation, and I find that technology helps me motivate my students, especially when the task is boring or repetitive.

This implies is that the use of technology must be woven into the existing systems of learning, rather than seeking to upend them and replace them with a new system. Faculty members tend to disagree on the patterns of technology integration as a concept, meaning they have different views on the scope, type, and impact of technology integration in the classroom. The interviews and the focus group analysis show dissenting views on all of these topics. For example, Avery said that technology must act as a support tool in the classroom, without it being a dominant aspect of the learning experience. Charlie remarked on the apparent disarray between the level of technology integration in FL and other fields. When the two participated in the focus group, the exchange went on and comparisons were made to sciences such as physics, biology, and others where technology was ubiquitous. However, Charlie remarked that FL represents a unique field, one where oral and written expression are paramount to the subject itself, which means that the technology used must be adapted to these needs.

Motivation and expectations

Gamification as described by Almeida & Simoes (2020) includes teamwork and collaboration to share ideas and solve problems. Parker and Kennedy reported students found gamification applications compelling under specific conditions. Parker and Kennedy confirmed that the use of technology in the classroom facilitates better immersion, which was largely due to the use of applications, most of which had some elements of gamification – usually points or experience attribution – which, as Parker stated, students found compelling.

This points to the discussion about the effects of gamification on attention retention and increased usage of technology, which are well documented, and which is why most modern applications and web services utilize such a system (Toda, et. al., 2017). A good example can be found in online language learning platforms – Duolingo, Babbel, and others – which combine language learning with gamification by rewarding students with points and advancement. The utility of this method, however, is largely dependent on the quality of the content delivered to users.

Majority of respondents mentioned, either in the interviews or the focus group, the mediating role of motivation. Avery commented how students in their class were highly motivated and excited whenever the class activity featured some kind of technology. Usually, it was a YouTube video or similar, but the difference in the level of attention and motivation was palpable.

Further, Sam commented “students seemed to be more interested when I put assignments online, and I saw their responses in class were different.” Instead of handing papers via email or in person, the students were told to upload them to the discussion board. There, the teacher

would examine and edit them for students to see. In a very short period, the quality of the assignments increased throughout.

Motivation was directly linked to the level of engagement by students. As Drew stated, projects that involved teamwork which were done online (pre-Covid) garnered much more attention and engagement. When students had to complete a project online, they performed better than they would have when undertaking that same project in the classroom. This compelled Drew to revise some of the course content to comprise multiple assignments that required creative thinking–such as creating a web page, building a short video from clips, finding lyrics for a song on YouTube, and similar. Engagement soared, according to the focus group discussion. Alex and Taylor jumped into the discussion to add their examples of how technology promoted engagement.

Charlie approached technology implementation from what can be seen as a constructivist framework: Classroom activities should emphasize collaboration and critical thinking, relegating the standard interpretivist approach to teaching to a secondary role. The emphasis on constructivist activities was the driver that prompted increased use of technology in the classroom as Charlie stated explicitly on several occasions throughout the interview and the focus group discussions. The modalities of technology deployed, however, were inconsistent. As Charlie argued, these inconsistencies created a difficult working environment where students' expectations increased, while the ability of the educator to provide meaningful solutions diminished. Eventually, the situation became untenable, so Charlie reverted to an interpretivist method of instruction.

Charlie observed,

> I tried to include their devices and have them interact, but I also had to deal with all of the material in the curriculum, so the sessions where we used technology were not very frequent. Also, I really suck (n.a expletive used and transcribed as said). It was fine at the start, since they thought it'd become a thing, you know, but after a while, most of them just lost interest. I had to do something, so I just took my program from last year and continued with that, but I tried to learn more about technology and how to include it in my classes.

As reported by Charlie, two factors made this approach unsuccessful - lack of training and the inability to effectively implement change. The issue of training, or lack thereof, on an institutional level, has been touched upon earlier. However, in this particular case, the educator wanted to expand their own skill set and sought out training possibilities outside of the institution. As reported, the availability of training programs aimed specifically towards education and interactivity with students was scarce, and those programs that were available did not cover aspects of technology integration that the educator sought – specifically, the integration of programs and activities that promote critical thinking.

The arguments presented by Charlie connect to the broader issue of change management, or rather the ability to implement change. Training is one of the key elements of this, as educators who are not properly trained – in this case in the use of technology – cannot facilitate successful change, i.e. implementation of technology in the classroom (Langset et al., 2018; Magen-Nagar & Shonfeld, 2018).

Training as a key issue for educators

By the account of the respondents, educators have limited access to training, little experience with technology, at least in the sense where it is used in a professional capacity, and do not know how to integrate technology successfully into their classes. This creates obstacles for technology integration, especially among educators who have been teaching for many years, as their methods are more profoundly tied to experience, thus making them less engaged with technology or willing to learn (Thomas, 2016).

In the focus groups, the researcher concentrated on these emerging differences and asked the interviewees to clarify any official or unofficial training they received that would have helped them use technology. Four respondents said they received training courses offered by their current employer, two said they learned to use technology from peers or family members, and two said they were given official instruction while working for a company.

The statements made by Charlie, Ryan, and Sam especially were expanded upon by the researcher who questioned the respondents whether technology training had any part in their professional development, and/or career planning. All of the respondents agreed, saying they thought technology know-how was a critical element of professional development, but were explicit that it has yet to become a part of formal career development. Three respondents – Charlie, Ryan, and Taylor - went further and explained that it was, at present, one of the core components of teacher literacy, and that it played a critical part in their ability to deliver teaching materials. When asked about their experiences with training, and specifically with technology training, Charlie stated:

> Ever since I started college, I knew I wanted to learn about technology at least in some capacity. This was not driven by any knowledge or foresight about the role of technology.

> I just wanted to know about it because it was everywhere. Tech this, tech that, you know? So I went and took a few courses to see what it was. I have to admit, modern technology has me confused at times, I just don't get all the apps kids are using. But, I try to stay ahead of the curve on the stuff that is tied to my field, just so I can help students and because I am aware of the impact of technology on education today. It has become an unavoidable element of professional development and us educators must do whatever possible to stay current.

The experience of Ryan was different in that they underwent formal technology training at the previous place of employment. As Ryan put it,

> My former workplace was really into the whole tech thing and they made available lots of courses for employees. The courses were online, but paid for by the company so we could pick and choose whatever we wanted. Of course, some courses were mandatory as a part of our onboarding process, but most of it was completely free to choose. I took several courses, first there was computer literacy, then basic HTML, and I think I took a java course but never finished. Overall, these helped me understand technology and made it easier later when I switched jobs.

Taylor received minimal exposure to training, and as a new faculty member the only contact with technology training was during graduate education when students had to take mandatory computer science basics course. As Taylor shared,

> Most of what I know about technology is from back in university, when we took a CS course in our final year. But, it was very superficial and did not get into the details, you know? I still got a good overview though, and after that I tried to follow up on my own,

but if I weren't using a phone and a tablet, I'd have a hard time keeping track. I think many older colleagues have issues with this, but I haven't really asked so can't be sure.

Overall, the role of training in technology implementation appears to be a central issue, especially given the absence of any sort of formal training in ALL, as evidenced by the responses given during the interviews. Most of the knowledge accumulated emerged from personal initiative or previous employment, which leaves open a discussion about the ability of faculty to integrate technology into the classroom without any external support, training, or institutional awareness of the problem.

This point was raised by Wujiabudula (2018) who argued that despite the belief of most educators about technology as an integral part of the learning process, very little is done to support the learning and training of educators. Effectively, technology implementation is seen as a goal by institutions, but a goal which is not supported by any type of initiative, such as training or resourcing (Garret, 2014). Moreover, as Stukalina (2012) and Bulman and Fairlie (2016) pointed out, training is not prevalent in educational institutions, even if they are technology oriented.

Pace of technology development is a key issue

A majority of the participants shared a common thread in how they experienced technology integration and the level of complexity associated with this exposure. For example, Alex and Avery shared a common thread in the context of technology integration, which is that of experience and complexity. While the wording was different in every case, the underlying message seems to indicate that the process of creating a new learning experience through technology necessitates a deep and fundamental shift in the modalities of thinking, teaching, and

approach to students, which can be linked to the inherent interest of teachers. This was reflected in a study by Ochoa (2011).

In addressing the participants experience in the implementation of technology, the participants agreed they were ill-prepare because of inadequate support, training, and resources. This was perplexing because many already stated examples of technology integration, so the moderator asked this question in both focus groups. The following answer by Drew seemed to sum up the group sentiment:

> we always need to know more about technology and we research and ask coworkers for ideas that we implement in the classroom. But it is difficult because the students know so much more than us and we cannot keep up.

For the most part, respondents stated they were somewhat interested in technology. This was evidenced by numerous mentions and invocations of the terms: *technology*, *interest in technology*, or *tech-oriented* in both the interviews and the focus groups. The majority of these statements were made in the context of the daily use of technology, either for private purposes or in the classroom. This is important as it illustrates the ubiquitous nature of technology today, something that most respondents seem to identify and perceive as relevant to their profession.

In understanding the types of different technologies used, a majority of the participants had difficult responding For example, Park explained the use of writing tools, table tools, and other "stuff.". When asked to clarify the definition of "stuff", Parker replied that it pertained to mobile applications and programs most students use. Parker was unable to name any. In the same line, Sam mentioned how they use their mobile phone for work and for mining the internet for materials when preparing the class.

All respondents except Alex and Drew used the term *pervasive* when asked about the technology use preferences of their students. References were made to frequent use of mobile phones, laptops, tablets, internet, and other IT solutions. Further, respondents stated that their students are far better at using and understanding technology than they were. However, it was reiterated several times how the respondents exploited technology in the classroom and how useful it was for a variety of purposes. In asking to clarify what was meant by technology and its use in the classroom, Kennedy and Taylor cited several tools for interactive problem solving, collaboration, and team exercises but could not name them precisely.

Jordan had limited understanding of technology and its implementation. Jordan used technology in the classroom, but different from other respondents. For the most part, the use of laptop, large screen, and other tools was limited to instruction support. The students were shown images, presentations, and other material using the projector. However, this approach showed no interactivity, and was deeply rooted in the traditional approach to learning. When asked to outline their approach to technology, Jordan stated

> I am not really interested in technology all that much. I mean, don't get me wrong, I use a smartphone and a computer, but only because it's impossible not to...(pause)…In class, I just stick to what I know works, you know, like a large screen, and only to help them (the students) follow along. They are never asked to interact, except when they have their presentations. I usually have them do these in groups…

The role of educators is shifting from knowledge transmission to facilitation. The quantity and quality of technology use in the classroom can be tied directly to the ability of the educator to facilitate the process. According to Avidov-Ungar & Forkosh-Baruch (2018), if the educator is not able to implement technology in a suitable way, it is highly unlikely that the

students will experience any positive effects from technology integration, even if it is present in the classroom. The model of learning employed by Jordan can be classified as structuralist in that it relies on existing norms and principles.

Technology as a factor that limits interaction

The difference in opinions between faculty and students was highlighted by Ryan and Kennedy during the focus group discussion, as they remarked on the attitudes of students who want more technology to be included but cannot conceptualize exactly how it could be utilized. However, this cannot be confirmed without examining the views of students. Kennedy provided an example of a student who repeatedly asked for the introduction of a game element in the class program. During this time, classes were held online, and the student believed that having a game-like project or interaction would better the learning experience. However, Kennedy disagreed and explained that there was no way to achieve this, especially when the class was struggling to keep with the assigned schedule, as a result of the virtual instruction constraints imposed by the Covid-19 pandemic.

In another anecdote, a student wanted the ALL to introduce tablets into the daily class practice, based on prior experience in a similar language school, so that every student could complete assignments without direct participation or oral communication. While Kennedy recognized, and pointed out in the focus group discussion, that the use of tablets would be beneficial, they noted that the process of language learning can be expanded to include tablets, provided they facilitate functionalities that would allow direct communication and interactivity to take place.

Ryan had several decades of experience in the field, was relatively well versed with basic use of technology, and adhered to a traditional approach to teaching. When asked to detail their

approach to learning, Ryan detailed the specific approach that leans on knowledge transmission, student collaboration, and team activities. However, Ryan emphatically held the view that the nature of FL precludes any approach other than interpretivist, as the subjects taught require constant interaction and exchange of information.

Ryan remarked,

> I know about all these new approaches, I mean, we read journals and all that, but I've never deviated from my teaching style. I do use technology, however, and try to include my students as much as possible. We do teamwork online all the time. And let me tell you, it was a heck of a problem for me at the beginning since I had no clue about any of that stuff. I taught myself, though, and been using it (n.a. technology) ever since.

Ryan noted that the students are urged to use computers during class, especially when tackling new words or grammar problems. Essentially, the students are asked to find creative solutions to common language problems, such as determining the proper verbiage, or structuring a sentence in the correct tense. To this end, Ryan claims, "technology goes a long way because it gives students motivation to learn and participate." However, when asked whether a more in-depth approach was needed, the respondent replied that technology cannot replace the actual learning that takes place during student-teacher interactions, which is why it will always remain just a support tool in FL education.

Language learning, while mediated by a number of factors, is still chiefly confined to the domain of direct communication between individuals. This is borne out by the specific content of the subject, and may be ascribed to the need to express language both verbally and in writing. If verbal expression were not as important for language learning, FL instruction might, arguably, be

more amenable to the broader impact of technology. However, this study revealed a plethora of divergent opinions and beliefs about technology and its applicability to the study of FL.

Conclusion

The analysis of the results yielded several findings that can be considered relevant to the discussion of technology implementation in FL classrooms. The interviews and the focus groups revealed strong support for technology in general. Furthermore, the examination of individual responses pointed to a focus on training as a core element of technology implementation, where most of the respondents argued that the current levels of support and training received on the institutional level were inadequate. When asked to name any particular software or hardware solutions that they deemed beneficial for technology implementation in their classrooms, the participants did not specify any innovation by name and continued to focus on enhanced systematic training practices instead. The data revealed an orientation towards changing the methods of instruction to better reflect the changing reality of education, specifically the shifting role of educators who are transitioning from knowledge transmitters to facilitators whose primary role is to teach students how to obtain and use information properly. This tendency was confirmed in the literature (where the traditional instruction methods were seen as incompatible with technology-oriented curricula and therefore in urgent need of rethinking and reformulation. Chapter 5 will examine and analyze the findings presented in this chapter.

CHAPTER 5

ANALYSIS

This study examined the views and beliefs of faculty members vis-à-vis technology in foreign language (FL) classroom. The questions that informed the research aimed to illuminate the perceptions of FL educators regarding the implementation of technology in the classroom. More precisely, the questions sought to examine the structural issues within the context of foreign language teaching that inhibit the implementation of technology. Additionally, the research questions aimed to determine whether any contributions (improvements, innovations) relative to technology in FL instruction were perceived by educators as potentially beneficial.

The following chapter will reflect on the underlying theoretical underpinnings that guided the research, connect these to the results of the interviews and focus groups presented in Chapter 4, and offer an interpretation of the results. Additionally, this chapter will outline the recommendations for actions that may impact current practice and recommendations for future research seeking to better understand the problem.

The study aimed to identify the structural issues that may impact FL teaching in the context of technology implementation, and to ascertain the benefits of specific types of technology to the learning process as understood by educators.

Reflection on Chapter 4 analysis

The findings from this research study concluded how there are three essential obstacles to training as follows: lack of institutional support, lack of training, and lack of access to technology solutions. While the lack of training and institutional support is widely cited as common obstacle to technology implementation, lack of access is more difficult to untangle. Rather than referring to access to technology itself, it is understood as the general inability of

educators to provide students with the proper tools and materials using technology, owing to their own deficiency of knowledge and skills. The finding that training and support are inextricably linked implies that access is a sub-function of training and institutional support, which will be discussed later in the chapter. In terms of the themes and underlying issues that emerged from the literature review, some overlap can be found in the discussion about the changing structure of education, specifically the role of educators, role of training and education in technology integration, and the need for institutional support during the period of transition between the two.

Learner participation has been identified as a key element of the process of technology integration, especially younger generations that have extensive knowledge of, and use for, technology. However, no amount of learner engagement will be impactful unless the educators are willing to engage with technology (Wang, 2019). The interviews clearly indicate a willingness to engage with technology. However, this willingness is mediated by three factors–knowledge, training, and experience (Tondeur et al., 2017; Wang, 2019).

This problem was touched on in the literature review, where the data on the potential harm of technology was addressed. Essentially, if technology is used for its own purpose, as some participants seem to suggest, the outcomes can be negative, as studies show a significant negative correlation between technology use in the classroom and student outcomes if there is no arbitrating factor–such as a different approach to learning, for example, the student-centered approach (Kim & Choi, 2018).

The key element of this process is the collaboration between the educator and the student, whereby technology becomes a tool that facilities learning and knowledge acquisition, rather than being the objective of the learning itself. What little evidence does exist (Cornell, 2012) for

the impact of technology on learning outcomes seems to indicate that it fosters critical thinking and reasoning skills rather than improved learning outcomes–in the sense of traditional assessment measurements.

The ability of educators to implement change in their classrooms depends by and large on their ability to understand and control for all of the underlying factors that may impede change. As discussed in the literature review, change implementation is a process that has no strict boundaries. To this end, most change initiatives rest on the ability of individuals and groups. However, one factor that seems to be critical for the success of any change initiative is leadership. While educators do indeed lead – at least within the four walls of their classroom – the specific demands of change management necessitate leadership skills that tend to go beyond those of the professional classroom instructor. The findings indicate, therefore, that most change initiatives tend to start from the top and then trickle down – although there are examples to the contrary, where leaders are made through the process of grassroots change initiatives (Langset et al., 2018; Magen-Nagar & Shonfeld, 2018).

The literature remains inconclusive as to the implications of increased use of technology in the classroom when assessing the quality of learning in higher education foreign language classrooms. What studies exist show very little-to-no difference in educational outcomes between technology-infused and traditional curricula (Avidov-Ungar & Forkosh-Baruch, 2018; Foulger et al., 2017).

Professional development

The respondents have, almost unanimously, touted access to online professional development and increased collaboration in the classroom as the two predominant contributions of technology. To clarify, respondents identified their students as being more proficient than they

themselves with technology, with most respondents claiming that they had to engage in training to remain effective educators. Because of the shifting nature of education, respondents view the implementation of technology as synonymous with effective teaching, at least to certain extent. This must be considered a significant finding as it indicates a dramatic shift in the beliefs and opinions of educators when compared to just a decade ago (Wujiabudula, 2018).

One element of technology implementation cited frequently in the interviews and focus group discussions was access and training as key points to consider when looking into technology implementation. Access to technology is predicated on the ability of the institution to provide educators with IT equipment and solutions they can use in the classroom. The literature review indicated as much, especially the work of Gray et al. (2010), Stukalina (2012), and Althoff and Leskovec (2015).

Before thrusting technology at the teachers and their students, much deep thinking is indispensable. Given the ubiquitous nature of technology today, especially mobile devices and the internet, one can hardly equate lack of access with a dearth of equipment. Rather, it could be argued that access pertains to the ability of educators to find, develop, or utilize digital materials and software in the classroom, the absence of which may constitute an obstacle to technology implementation. As Afreen (2014) points out, the use if iPads and other devices showed mixed results, which are largely contingent on the ability of educators to create materials and content that is oriented on technology-assisted learning.

Closely linked to this is the issue of training, or lack thereof. Almost all of the interviewees have cited three key elements that inhibit technology integration – lack of access to training, lack of experience with technology, and lack of know-how pertaining to the integration

of digital materials into the curriculum. This speaks to a broader issue of digital literacy and the need for change in the conceptualization of technology in FL classrooms.

Interpretation of findings

The analysis of the findings yielded six themes. These themes were isolated through the narrative analysis of the responses provided by respondents using the Labov (1967) narrative framework. Each of the themes provides insight into the opinions of faculty members regarding technology in the classroom.

Overall, the identified themes support the underlying purpose of this study, and are further confirmed through the data collected and analyzed in Chapter 4. Moreover, the data seems to indicate that much of what has been stated in the literature about systemic barriers to technology implementation and use aligns with the beliefs of the respondents, which will be expanded upon in the following sections.

Common threads in perception of training and training availability

Training and its availability to faculty and staff.

The responses in the interviews and the case studies indicate a significant level of disarray in the availability of IT training for faculty members. As shown by the responses in the interviews and the case studies, there exists a need for a more systematic approach to training among faculty. The majority of respondents saw the current models of training to be insufficient or inappropriate for the specific demands of the workplace, particularly in respect to technology implementation. More experienced respondents were reportedly more affected due to their lack of previous knowledge. Several respondents attested to previous experience and training in IT, but only one respondent ascribed their experience and training to institutional support (during previous employment), whereas others received training privately or through paid courses. The

literature on the impact of training is generally conclusive about the role of training. As pointed out by numerous studies (Afreen, 2014; Althoff and Leskovac, 2015; Stukalina, 2012), training and training availability are the core elements needed for successful technology implementation.

Training availability

The access to training on an institutional level, according to the respondents, seems to be a critical problem. While most respondents reported that they had at least some training, this was unofficial by and large, or took place in a capacity that was not directly related to their role as educators. This despite the reality that educators must acquire the skills and the knowledge to apply technology in their classroom, even if they receive no institutional support (Garret, 2014; Georgina & Hosford, 2009).

Any educator that is not proficient in technology will not be able to utilize the tools available to them in any meaningful way, which in turn limits their efficacy as educators. As stated by several respondents, students are increasingly interested in technology and in general much more acclimated to its use than educators, which leads to a disconnect between student expectations and the ability of educators to meet said expectations (Garret, 2014; Georgina & Hosford, 2009).

This finding aligns with the statements made in the interviews, where most respondents stated that the use of technology depends mostly on their own motivation and that of their students. Charlie and Sam were particularly vocal on these points, as they explained how technology helps them motivate students (Brooks, 2015). Respondents did not mention institutional support as the source of technology integration in FL education, which indicates a broader trend within education, where sciences such as physics, IT, mathematics, and other STEM disciplines turn to technology as a core competence, whereas social sciences, humanities,

and other fields ignore technology-based curricula almost entirely. This assertion is supported by the literature (Pomerantz & Brooks, 2017), and implies a disconnect between the ability of educators to teach their students and the expectations of students who see and use technology as an integral element of their life (Brooks, 2015).

What emerges from the results and the broader literature on technology integration is the existence of a gap between the views of faculty members (Brooks, 2015). While most respondents see technology as a necessity in the classrooms, the range of views on the depth of integration, models of integration, and utility of completely technology-integrated curriculum is diverse. According to Feldman and Weiss (2010) the use of methods that promote communication and shared learning in which both administrators and faculty members play an active role, has the potential to bridge the different conceptualization of technology between the two groups and within groups.

The process of technology implementation, according to Frederiksson et al. (2008) depends on a number of factors, from availability of infrastructure and training to policy, strategy, and leadership vision. The findings provided the researcher with a better understanding of how educators perceive the broader narrative of education policy, leadership, and curriculum development. Specifically, absence of training, institutional support, and resource-dependency were identified by the participants as the main obstacles to technology integration in FL education. Considering that the vast majority of respondents agree on the value of technology, and that the broader literature supports this assessment, it is necessary to examine how and why leaders of educational institutions address the gaps in technology implementation and content delivery. According to Ayub et al. (2012) part of the reason may be the absence of a broader development policy, either on the institutional, state, or federal level. Such a policy would

present educators, administrators, and other stakeholders with a clear pathway towards technology integration.

According to Mamani and Cipi (2013) education is increasingly geared toward the adoption of technology-integrated curriculum. Cavas (2011) argued how the implementation or systematic change depends on how educators are able to successfully adopt these new standards in the classroom. This indicates that technology-oriented training represents a critical element for the success of any change initiative in the teaching of FL or any other discipline, as it correlates directly with the ability of educators to deliver technology-based content to students (Cavas, 2011; Kusano et al., 2013).

The data extracted from this study indicates that technology-integrated curriculum is already a reality, but systemic obstacles, as evidenced by the interview responses, tend to obstruct further implementation. Specifically, several respondents remarked on the absence of systemic training initiatives, forcing them to depend on existing knowledge and individual resources for technology integration. Training in particular, has been identified by respondents as a key component in this process, because any amount of effort invested by the faculty cannot compensate for the absence of a clear and uniform approach to technology integration.

Change management as a path to technology integration

The theoretical foundation of this study was built on the intersection of change theory and theory of leadership as the perceived tool with which FL educators could adapt to an increasingly technology-dominated education system (Liu, et.al., 2017; Ode, 2011). The participants found change management to be a key element in technology integration. While most respondents recognized the need for technology implementation and expressed strong affinity towards such a process, there was no clear pathway or suggestion offered by any of the respondents as to the

process by which such a change would be implemented. The literature on change management in education points to the need for a transformative process that engages across all levels of the system in order to create a system (Abrahams, 2010; Smuts et al., 2017). This would necessarily include educators, administrators, leaders, policy makers, and all other stakeholders (Abrahams, 2010; Smuts et al., 2017).

The underlying requirement for any change to take place, according to the tenets of change theory, is systemic alignment where all stakeholders partake in the process. While resistance to change is one of the key elements for failure of change initiatives, it can be counteracted through transformative leadership (Khan et al., 2018).

The processes of transformation thus far, particularly those aimed at technology integration in FL have been localized, specific to a single institution or program, and have lacked the depth necessary and sufficient to achieve real change (Akins et al., 2019; Vlados, 2019). Five respondents expressed that the main determinant barring implementation of technology on a broader scale emerges from the absence of systemic policy initiatives that would transcend any one group and mobilize the entirety of the system.

The data analysis indicates that the positive shifts in technology implementation warrant a broad discussion about systemic change due to the rapidly shifting models of learning and instruction (Lee et al., 2017, Mackh, 2018). The respondents shared throughout the study that the use of technology closely aligns with the choice of instruction model, as seen by the example of Kennedy, who was adamant in the maintenance of traditional instruction methods despite technology requirements. Similarly, four respondents have voiced concerns about their ability to implement technology effectively and without constraints due to the shifting focus of education. The author opines that the issue may be related to the specific nature of the subject-matter, but

this assertion is far too vague and at present uncorroborated by evidence to be supported. However, it does raise interesting topics for future research, namely the interaction between subject-matter and technology integration, or more broadly the utility of novel models of instruction in some fields within education.

Recommendations

While this study has sought to approach the phenomenon of technology implementation in FL education objectively, the research design was inherently limited as it relied on the personal points of view and perspectives of educators. The crux of the material in the study, therefore, lacks proper generalizability that would be afforded to large-scale qualitative or quantitative studies based on surveys or other data collection methods.

Future research seeking a deeper and more comprehensive understanding of the issue of technology integration, or lack thereof, in FL education should scrutinize the practical aspects of IT, how it is used, and what methods educators employ in the classroom. While this study has examined the approach of several respondents in detail, any future research should strive to include a variety of educators from several institutions, and in much greater number. In this respect, the author of this study would recommend that the problem of technology integration be looked at from a broad system-wide perspective. Levying the responsibility on individuals or institutions may yield some rewards, but to affect true change the system itself must be reshaped so as to facilitate technology integration more easily.

Training appears to be a central point of concern for respondents, and the evidence from the literature points to this as well. Successful technology implementation necessitates institutional emphasis on training and resourcing that would support faculty throughout the process of implementation. The faculty members were accepting of technology implementation

and suggested more training and support from the institution. The development of a strategic institutional training policy, then, would go a long way in supporting the push for technology integration.

The literature on this subject is divided into two camps, one that argues for and one that argues against technology integration. A study that could resolve these differences with strong, reliable, and highly generalizable results would add much to the current understanding of the phenomenon. Moreover, deeper analyses of the structural barriers, and ways to overcome them would increase opportunities for effective implementation of technology in the FL classroom.

Implications

The purpose of this study was to examine the views and opinions of educators about the implementation of technology in the FL classroom. The contribution of this study to the broader literature lies in its attention to FL as a subject and the connections made between the need to affect change on a systemic level and the perceptions of educators about their role in technology implementation. Moreover, the study identified key barriers to technology implementation, as reflected on by the respondents who cited several critical issues, mostly related to lack of training and resource scarcity.

Understanding the views and opinions of FL educators can offer insight to future research and practice, specifically the roles of administrators and education leaders in their decision-making practices aimed at technology and curriculum advancement. Furthermore, faculty can utilize this study to better understand a variety of perspectives offered by their peers, some of which may diverge from theirs, thus offering opportunities for collaboration and development.

A majority of the participants recognize technology to be a positive addition to the process of learning, though each has different ideas on the implementation of technology. Moreover, seven respondents expressed views on technology that call for systemic and institutional approach to training and improved access, irrespective of their preferred model of usage. This indicates that institutions where FL is taught must consider technology implementation as a priority.

While Alex and Ryan believe it to be ubiquitous and an inextricable part of the learning process, Taylor views technology as little more than a support tool. Any change initiative that seeks to invigorate the use of technology in FL classrooms must take notice of these differing views and craft an approach that is founded on research and supported by practitioners.

Despite the need for a broader institutional approach to technology implementation that would activate resources across the entire higher education system and gear them towards this goal, the technology must be adapted to those who will be the primary users – educators and students – which invariably includes a thorough examination of existing practices, consultations, and a broad examination of theory so that any decision can be fully informed and well developed (Cortellazzo et al., 2019; Thannimalai & Raman, 2018). In connection with the results of this study, technology can be identified as a point of interest for educators. Moreover, the results indicate that the majority of respondents believe systemic barriers to its implementation exist and that action by the institution(s) and the broader education system is needed to overcome these barriers.

Conclusions

The data collected and analyzed in this study, coupled with an extensive review of the literature indicates that FL education is significantly behind other fields – particularly STEM

fields – in terms of technology implementation (Lin et al., 2017; Vasiukovych, 2018). The exact rationale for this discrepancy remains unclear. As evidenced by the data collected in the interviews and the focus groups, the range of opinions on technology integration is FL is broad, ranging from minimalist to integrative approaches.

In addressing how the participants perceived their personal level of IT skills, a majority of the participants shared their ability to navigate using technology to accomplish daily activities. Only a few respondents reported having significant advanced knowledge of IT. Based on the responses in the interviews and the focus groups there is significant value in technology implementation in a FL classroom. This is borne out by the literature, where a number of studies reflect positively on the impact of technology and accentuate the need for its broader use (Elfeky et al., 2016; Liu et al., 2017; Pimmer et al., 2016).

One concern that emerged from the discussions with the respondents was a serious lack of emphasis on training and skill acquisition related to technology on an institutional level. As reported by several participants, most of the skills and training they received derived from external programs, either in education or private, and very little, if any, was the result of any institutional orientation towards technology. According to Bucur & Popa (2017) when compared to the approach in other fields, where educators not only receive training but are actually the leaders in the field of technology development, FL education is left behind in terms of technology implementation.

Institutional orientation towards technology appears to be one of the main concerns for most respondents, which fits with the initial examination of the phenomenon from the perspective of change management and leadership. As cited by many authors (Al-Harthi & Emam, 2017; Cortellazzo et al., 2019; Gonzales, 2019; Sari, 2019; Thannimalai & Raman, 2018)

it will be nearly impossible to move forward with change initiatives aimed at technology integration without leaders who can recognize and properly evaluate the drawbacks of technology-lagging fields. While personal initiative is always welcome, the process of technology implementation has been shown to be uneven, highly localized, and isolated from the broader shifts in the curriculum.

The utility of technology, then, must be appraised in accordance with the context in which it is used. As stated throughout this study, technology for technology's sake is not a solution, nor does it represent any positive shift in the model of learning. Only when coupled with strong and directed initiatives that seek to inform practice, leads to effective skill-acquisition, and produce activity-based programs, can technology be considered a positive aspect in FL education.

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Appendices

Appendix A: Email to Potential Participants

Dear Invitee,

My name is Bashar Al Saadi. I am currently enrolled in a doctoral program at New England University's Education Leadership program. I am hereby requesting your participation in my doctoral research study titled: Implementation Of Technology In The Foreign Language Classroom. The goal of the study is to explore the views of foreign language educators about technology implementation in the classroom and potential obstacles that hinder the process.

The study will comprise an interview and a focus group. The interview will comprise questions about the chosen topic and basic demographic questions. The focus group will further expand on the questions from the interview in a discussion format.

Your participation is completely voluntary, and you are free to withdraw your participation at any time. Moreover, participation is anonymous, therefore your personal details will not be disclosed to anyone before, during, or after the conclusion of the study.

Should you wish to participate in the study, please see the enclosed Informed Consent form and confirm your participation with a signature.

While your apprehension is understandable, participation would provide much needed insight into a topic that is critical for the field of foreign language education.

Thank you for your time and participation

Sincerely,

Bashar Al Saadi

Appendix B: Consent for Participation in Research

Letter of consent

Your participation in this study is greatly appreciated. However, before accepting the invitation, please read through this form to understand what the study's goals are, what your involvement will entail, and other pertinent information about the study.

Purpose of the study

The purpose of the study is to examine and understand how foreign language educators working at a premier tertiary education institution understand and describe the discrepancy between the levels of technology implementation in foreign language (FL) education and the current extent of technology usage in the field. Moreover, the study seeks to understand how educators account for the structural issues that might inhibit the implementation of technology.

The role of the participant

Once you have read this letter, consider the possibility of joining the study. The researcher will contact you within seven days and ask if you would like to participate. If you answer yes, there is nothing else you need to do until the scheduled date of the interview. The researcher will provide you with all the details such as location, and a potential time schedule.

Why me?

This study is aimed specifically towards foreign language learners and the researcher determined it was best to focus on a single institution. Therefore, the pool of respondents is very limited hence the invitation was sent to all FL educators working at the institution.

Do I have to participate?

No, the choice whether you will take part in this study is completely up to you. Participation is voluntary. The researcher will try to explain the details as much as possible without jeopardizing the study itself so that you can better understand the concepts behind the research.

Payment

There will be no payment or gifts handed out for participation.

Confidentiality

Every piece of information collected during the research process will be kept strictly confidential. The author will never publish any private information about the participants nor will anyone have access to the data, other than the author.

Complaints and further information

If you have any concerns about the study or the researcher himself, you can contact him directly at balsaadi@une.edu. If this does not resolve the issue you should file a formal complaint to the researchers' institution.

Date

_____

I hereby consent to participate in the study

_____

Appendix C

Participant Consent Agreement Form

UNIVERSITY OF NEW ENGLAND

CONSENT FOR PARTICIPATION IN RESEARCH

Implementation of Technology in the Foreign Language Classroom

Principal Investigator:

Email:

Introduction:

Please read this form, and you may also demand that the form is read to you. The purpose of this form is to equip you with information regarding this research study, and if you decide to participate, confirm that decision.

You are encouraged to ask any questions that you may have about this research, now, during, or after the research is complete. You can take as much time as you need to decide whether you want to participate. Your participation is voluntary.

Purpose of the study:

The purpose of the study is to examine and understand how foreign language educators working at a premier tertiary education institution understand and describe the discrepancy between the levels of technology implementation in foreign language (FL) education and the current extent of technology usage in the field. Moreover, the study seeks to understand how educators account for the structural issues that might inhibit technology implementation.

Who will be selected for the study?

8 to 14 Foreign Language teachers

What will I be asked to do?

Participate in a one-on-one interview lasting approximately 40 to 60 minutes via video conferencing platform Zoom. The researcher will review this consent form before the interview begins, and the participant will have an opportunity to sign this form. Since the interview will be conducted online, electronic signature or email consent will be accepted. **Please note: these interviews will be audio recorded.** Signing this consent form indicates your willingness to be audio recorded. Once the researcher finishes examining the transcript, you will receive an email asking you to comment on the

conclusions drawn based on the analysis of the comments made during the group discussion. If you have any questions at any time, please contact the researcher at

What are the possible risks of taking part in this study?

There are no identifiable risks associated with participating in this study.

What are the possible benefits of taking part in this study?

Participants will not receive any monetary benefits. Your participation may lead to the advancement of technology use in the field of Foreign Language teaching.

What will it cost me?

There are no financial costs associated with participation.

How will my privacy be protected and data be kept confidential?

- Every piece of information collected during the research process will be kept strictly confidential. The author will never publish any private information about the participants nor will anyone have access to the data, other than the author. No academic advisors or other administrators will know of participation in this study.
- Electronic files (documents, audios, and transcripts) will be stored in the personal laptop of the researcher hard drive which is encrypted twice.

What are my rights as a research participant?

- Your participation is voluntary.
- Your decision to participate will not affect your relationship with the researcher.
- You may skip or refuse to answer any interview question for any reason.
- You may withdraw from the study at any time. Withdrawing from the study will not result in any penalties.
- The principal researcher may terminate your participation in the study at any time for any reason, with or without notice to you.

Whom may I contact with questions?

- The researcher conducting this study is Bashar Fareed. For questions or more information concerning this research, you may contact him at his balsaadi@une.edu or via phone at.
- If you choose to participate and believe you may have suffered a research-related injury or issue, the faculty advisor, Dr. Cynthia Kennedy may be contacted at ckennedy5@une.edu with any questions, comments, or concerns.

- If you have any questions, comments, or concerns about your rights as a research subject, you contact Mary Bachman DeSilva, Sc.D., Chair of the UNE Institutional Review Board at (207) 221-4567 or irb@une.edu.

Will I receive a copy of this consent form?

- You will be given a copy of this consent form.

PARTICIPANT'S STATEMENT

I understand the above description of this research and the risks and benefits associated with my participation as a research subject. I agree to take part in the research and do so voluntarily.

_____ _____

Participant's signature or
Legally authorized representative

Date

_____

Printed name

RESEARCHER'S STATEMENT

The participant named above had sufficient time to consider the information, had an opportunity to ask questions, and voluntarily agreed to be in this study.

_____ _____

Researcher's signature

Date

_____

Appendix D

Email for participant recruitment

Hello,

My name is Bashar Al Saadi and I am currently enrolled in a Doctoral program at the University of New England. As a part of this program, I am conducting a research study focused on the experiences of foreign language (FL) educators with technology implementation. I would appreciate if you would take the time to participate in this study. Should you accept, you would be asked to participate in one interview with the researcher and a follow-up focus group. Your participation is voluntary and completely confidential. Thank you for your consideration.

Sincerely,

Bashar Al Saadi

Appendix E

Semi Structured Interview Protocol

Date:

Time:

Thank you for your participation in this interview. The focus of the study is to understand potential barriers for technology implementation in foreign language (FL) education from the perspective of educators. This interview will last approximately 45-60 minutes and will be recorded with your permission. Do I have your permission to record this interview? The researcher will record in notes that each participant consented to be recorded.

If you have any questions, you may ask them now or after the completion of the interview.

Demographic questions

1. How many years have you been teaching FL in this setting?
2. What is the highest level of education you attained?

Interview questions

1. How much does the level of tech knowledge of the teacher impact the technology use?
2. Have you implemented any type of technology in your classroom, or took part in any initiative to implement technology?
3. In your own words, how would you describe the current state of technology implementation in FL education?
4. If any, what types of technology would be best suited for your classroom and why?
5. What are the main challenges to technology implementation in FL?
6. In your view, would FL education be better or worse if it was more reliant on technology? Explain.
7. Do you feel that technology plays a role in language learning? If so, how?
8. How much does the level of tech knowledge of the teacher impact the technology use?

Appendix F

Focus Group Protocol

Date:

Time:

Principal investigator: Welcome and thank everyone for coming. Hi, I am Bashar Al Saadi, and I will be moderating our focus group today. I have got some forms that I am going to pass out to you via Zoom chat feature now. These forms tell you a little bit about the purpose of this focus group and this process. We will need your signature on the form, which states that you consent to participate in this focus group.

--*The principal investigator sends out informed consent*--

Principal investigator: With your permission, I will record this interview. It should last between 60-90 minutes. I will ask you some open-ended questions, and I would like you to share your responses to them. Please give only information you are comfortable sharing. Everything you say is strictly confidential – I will not use your real names at any time during this research project. Please remember that you can leave at any time.

Again I would like to extend my gratitude for your participation here today. The first question is….

THE QUESTIONS FOR THE FOCUS GROUP WILL BE DEPENDENT ON THE THEMATIC ANALYSIS OF THE INTERVIEWS.

Principal investigator: That was our final question. Is there anything else that anyone would love to add or any further comments concerning what we have discussed today? This concludes our focus group. Thank you again for coming and participating. Once the researcher finishes examining the transcript, you will receive an e-mail asking you to comment on the conclusions drawn based on the analysis of the comments made during the group discussion. If you have any questions at any time, please contact researcher at E

Appendix G: Interview Questions

Each respondent was given the same set of questions, starting with a demographic inquiry and followed up with a number of questions pertaining directly to the phenomenon at hand. The broader demographic information was collected beforehand, so it was not included in the interview.

1. How much does the level of technology knowledge of the teacher impact the technology use?

2. Have you implemented any type of technology in your classroom, or taken part in any initiative to implement technology?

3. In your own words, how would you describe the current state of technology implementation in FL education?

4. If any, what types of technology would be best suited for your classroom and why?

5. What are the main challenges to technology implementation in FL?

6. In your view, would FL education be better or worse if it was more reliant on technology? Explain.

7. Do you feel that technology plays a role in language learning? If so, how?