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TEACHERS AND VISUALLY IMPAIRED EFL STUDENTS' EXPERIENCE AND PERCEPTIONS ABOUT USING SCREEN READERS AT AN ENGLISH INSTITUTE IN AN ECUADORIAN UNIVERSITY

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AUTHOR: Jessica Estefania Revelo Trujillo

DIRECTOR: MSc. Gabriela Portilla

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THESIS APPROVAL BY THE THESIS DIRECTOR

As thesis tutor of the study ¨TEACHERS AND VISUALLY IMPAIRED EFL STUDENTS' EXPERIENCE AND PERCEPTIONS ABOUT USING SCREEN READERS AT AN ENGLISH INSTITUTE IN AN ECUADORIAN UNIVERSITY.¨ submitted by Jessica Estefania Revelo Trujillo in partial fulfillment of the requirements for the Maestría en Pedagogía de los Idiomas Nacionales y Extranjeros: Mención Inglés, I certify that this thesis work meets sufficient requirements and merits to be submitted to private presentation and evaluation by the thesis committee.

Ibarra, March 26th, 2020

Firmado electrónicamente por:
HILDA GABRIELA
PORTILLA TORRES

MSc. Gabriela Portilla

I.D.: 1002520532

Thesis tutor

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ID-NUMBER:	1003165600		
SURNAMES AND LAST NAMES:	Revelo Trujillo Jessica Estefania		
ADDRESS:	Quito, La josefina. Esmeralda y Citrino		
EMAIL:	jerevelot@utn.edu.ec		
PHONE NUMBER:	025105057	**CELLPHONE NUMBER:**	0958919885
THESIS DATA			
TITLE:	"TEACHERS AND VISUALLY IMPAIRED EFL STUDENTS' EXPERIENCE AND PERCEPTIONS ABOUT USING SCREEN READERS AT AN ENGLISH INSTITUTE IN AN ECUADORIAN UNIVERSITY.¨		
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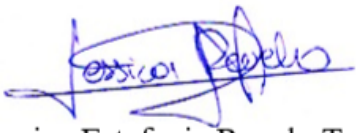

Jessica Estefania Revelo Trujillo

I.D.: 1003165600

BIBLIOGRAPHIC RECORD

Guide: POSGRADO –UTN

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THESIS DIRECTOR: MSc. Gabriela Portilla

The aim of this qualitative phenomenological study was to describe teachers and English Foreign Language (EFL) visually impaired students' experience and perceptions about using screen readers in English classes. The specific objectives were: To explore students' experience about using screen readers in English class. To elucidate teachers' experience and perceptions working with visually impaired students who use screen readers in class. To reveal the main benefits that teachers and visually impaired students attribute to the use of screen readers in English class.

Date: Ibarra, January 29th, 2021

Firmado electrónicamente por:
HILDA GABRIELA PORTILLA TORRES

MSc. Gabriela Portilla
Thesis tutor

Jessica Estefania Revelo Trujillo
Author

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DEDICATION

To my beloved parents and grandparents for their unconditional love and support that made the person who I am. To my boyfriend and sister for being always by my side. To my whole family for greatly contributing to accomplish this goal in my professional life.

TABLE OF CONTENTS

THESIS APPROVAL BY THE THESIS DIRECTOR ii

AUTHORIZATION OF USE AND PUBLICATION IN FAVOR OF UNIVERSIDAD TÉCNICA DEL NORTE iii

BIBLIOGRAPHIC RECORD v

ACKNOWLEDGEMENTS vi

DEDICATION vii

LIST OF TABLES xiii

LIS OF FIGURES xiv

RESUMEN xv

ABSTRACT xvi

CHAPTER I: Introduction 1

1.2. Problem statement 3

1.3. Justification 4

1.4. Research Objectives 5

1.4.1. General objective. 5

1.4.2. Specific objectives 5

1.5. Research Question 5

1.5.1. Sub-research questions. 5

1.6. Significance 6

1.7. Definition of terms....6

1.8. Delimitations....8

1.9. Limitations....8

CHAPTER II: Literature Review....10

2.1. Education for visually impaired people....10

2.2. Ecuadorian inclusive education....12

2.3. Assistive Technology....13

2.3.1. International studies on assistive technology (screen readers)....14

2.3.2. Assistive technology (screen readers) studies in Ecuador....18

2.3.3. Assistive Information Technology- Screen readers....20

2.3.3.1. JAWS.....20

2.3.3.2. NVDA.....21

2.4. Conceptual Framework....23

2.4.1. Theories and Models supporting Assistive Technology....23

2.4.1.1 Universal design (UD).....23

2.4.1.2. Cybernetics model.....27

2.4.1.3. Digital accessibility.....29

2.4.2. English as a Foreign Language in the Teaching & Learning Process of Visually Impaired Students....31

2.4.2.1. Language acquisition theory.....31

2.4.2.2. Constructivism.....33

2.4.2.3. Laurillard conversational model.....34

CHAPTER III: Methodology 37

3.1 Research Approach 37

3.2 Research Method 38

Sub-research questions. 39

3.3 Population and Sample 39

3.4 Tools and Techniques 40

3.4.1. Data analysis 42

3.4.2. Strategies for Validating findings 43

3. 5 Ethic Considerations 43

CHAPTER IV: Discussion of Findings 44

4.1. Discussion of Main Findings 44

4.1.1. Main Research Question 44

4.1.1.2. Sub-research questions. 44

4.1.2. Description of the Context of the Study and the Participants 45

4.1.2.1. Description of the context of the study. 45

4.1.2.2. Description of participants. 45

4.1.3. Results: Categories 46

4.1.3.1. Students' interview. 46

4.1.3.2. Teachers' interview. 86

CHAPTER V: Pedagogical implications, conclusion and recommendations 112

5.1. Summary 112

5.2. Pedagogical Implications 112

5.3. Recommendations....114
5.3.1. Ecuadorian universities....114
5.3.2. Ecuadorian EFL teachers....115
5.3.3. Ecuadorian EFL VI students....115
5.4. Conclusions of the study....115
CHAPTER VI: Proposal....118
6.1. Rationale....118
6.2. Beneficiaries....118
6.3. Impacts....119
6.4.Tips on Getting started teaching VI students who use JAWS screen reader....119
6.4.1. Tips.....120
6.4.1.1. Guidelines to adapt material.....120
6.5. E-text writing strategies....121
6.5.1. Pre- practice....121
6.5.2. Spelling exercises....122
6.5.2.1. Spell checker.....122
6.5.2.2. Clusters....123
6.5.2.3. Jumbled words.....125
6.5.3. Simple sentences and paragraphs formation....126
6.5.3.1. Sentence formation.....126
6.5.3.2. Paragraph formation.....129
REFERENCES....133

APPENDICES 139

Appendix A Consent letter 139

Appendix B Instruments 140

Interview Questions 140

Student's interview questions 140

Teacher's interview questions 141

LIST OF TABLES

Table 1 Universal Design Guidelines 24

Table 2 Universal Design Principles.....25

Table 3 First Steps in Implementing Universal Design 26

Table 4 Description of the participants 45

Table 5 Students' Interview 46

Table 6 Activities using screen readers in English class.....65

Table 7 Teachers' Interview 86

LIS OF FIGURES

Figure 1. Cybernetics Process in Class. 28

Figure 2. Constructivist and Traditional Classrooms' Differences. 34

Figure 3. The Conversational Framework Theory recognizing Useful Activities to complete the Learning Process. 35

Figure 4. Word spell checker example.....122

RESUMEN

EXPERIENCIA Y PERCEPCIONES DE LOS DOCENTES Y ESTUDIANTES NO VIDENTES DEL IDIOMA INGLES COMO LENGUA EXTRANJERA SOBRE EL USO DE LECTORES DE PANTALLA EN UN INSITUTO DE INGLES DE UNA UNIVERSIDAD ECUATORIANA.

Autora: Jessica Estefania Revelo Trujillo

Email: jerevelot@utn.edu.ec

La enseñanza a estudiantes no videntes ha sido un gran reto en Ecuador, y más aún en el ambiente educativo de inglés como lengua extranjera donde pocos estudiantes han tenido el apoyo para desarrollar sus habilidades del idioma inglés. Sin embargo, la tecnología asistida como los lectores de pantalla ha facilitado la inclusión de estudiantes no videntes en el ambiente educativo de esta lengua extranjera. Por lo tanto, el objetivo de este estudio cualitativo fue describir la experiencia y percepciones de docentes y estudiantes no videntes sobre el uso de lectores de pantalla en clases de inglés. Para esto, se usó una muestra intencional donde tres estudiantes no videntes y dos docentes de inglés fueron entrevistados. La entrevista fue semiestructurada para ahondar información sobre el uso de los lectores de pantalla. Los resultados revelaron dos argumentos diferentes: (1) el uso de lectores de pantalla para aprender inglés ha sido muy efectivo para los estudiantes no videntes y (2) los docentes no tienen suficiente preparación para ayudar a sus estudiantes quienes usan lectores de pantalla en clases. De esta manera, este estudio recabo un entendimiento más profundo sobre las percepciones de los participantes. En base a esto las implicaciones pedagógicas demostraron el nivel en el cual los estudiantes usan los lectores de pantalla para desarrollar sus habilidades del idioma y abrió puerta a que los docentes comprendan la importancia de prepararse para enfrentar estos retos de la inclusión educativa ecuatoriana en relación a la enseñanza del idioma inglés como lengua extranjera.

Palabras clave: no videntes, inglés, lengua extranjera, inclusión, lectores de pantalla.

ABSTRACT

TEACHERS AND VISUALLY IMPAIRED EFL STUDENTS' EXPERIENCE AND PERCEPTIONS ABOUT USING SCREEN READERS AT AN ENGLISH INSTITUTE IN AN ECUADORIAN UNIVERSITY.

Author: Jessica Estefania Revelo Trujillo

Email: jerevelot@utn.edu.ec

Teaching visually impaired (VI) students has been a big challenge in Ecuador, and even more in the English foreign language (EFL) educative environment where few of these students have had the support to develop their language skills. However, assistive technology like screen readers have facilitated the inclusion of VI students in the EFL Ecuadorian classrooms. Therefore, the aim of this qualitative phenomenological study was to describe the perceptions and experiences that teachers and VI students have concerning the use of screen readers in English classes. The literature review revealed that there is little information about this topic in Ecuador. To conduct this study, I used a purposeful sample to select three EFL VI students and two English teachers. I used a semi-structured interview to deepen information about their perceptions and experiences about using screen readers to learn English. The findings showed two different arguments: (1) using screen readers has been an effective influence in order for VI students to learn English and (2) teachers do not have sufficient preparation to help students who use screen readers in their classes. Then, this study might delve into a deepest understanding of the participants' thoughts about the benefits of screen readers to learn English. According to this, the pedagogical implications showed to what extent the students use screen readers to develop their input and output language skills. Educators, on the other hand, could be aware of the importance of being prepared to face the challenges of inclusive education in the Ecuadorian EFL setting.

Key words: visually impaired, English, EFL environment, inclusion, screen readers.

CHAPTER I

1.1. Introduction

The English Foreign Language (EFL) field in Ecuador has been going through different changes and policies from the CRADLE (Curriculum Reform Aimed at the Development of the Learning English) project to the last CEFR (Common European Framework of Reference) standards. This changes have aimed to improve the English education process in the country, for instance this led to the creation of a set of different curricular guidelines by the Ministry of Education to be applied by the Ecuadorian educative institutions. This shows how English has become an essential part of the Ecuadorian education and not only for accomplishing the different academic requirements but also for being part of a more competitive world. On the other hand, implementing new curricular policies implies that every student should be included in this process. That is why the Ecuadorian constitution establishes that everybody has the right to access to education. In this sense, education has always been a discussion topic about what is the most effective way to teach and make every student learn consciously. Each human being has his own system of learning according to their needs and the environment that surrounds them. That is why, different teaching and learning styles appear in order to guide educators to convey knowledge effectively to heterogeneous classes, including those who have any type of physical or cognitive disability. In fact, Zandy (2019) in the Universal Declaration of Human Rights establishes that education is a universal right that human beings have without any distinction, this includes people with different impairments. That is the case of the subsequent examples about people who have made important and high achievements in their academic process. For instance, Stephen Hawking, who despite his physical problems, brought about many key science researches such as. Another good example is Sonia Villacres, president of Latin American Federation of Deaf blind, who has been recognized for her studies and works about deaf blind people's inclusion in the society.

These examples show that when applying the art of educating in a correct way, teachers and students can be benefited to succeed in their daily life. In order to accomplish this, teachers are normally trained to know what to face in a classroom as well as handle their students' strengths and weaknesses. However, it is still challenging for educators to improve the level of education in a classroom with different skilled individuals. Another issue is that students tend to have doubts about what is going to happen within a class, and even more visually impaired students; consequently, they are not able to see physically what is going on around them. In this case, their senses develop more like hearing accurately, for this reason it is important to implement adequate tools to help them in the process of learning such as the use of screen readers. The Educación Especializada e Inclusiva – Ministerio de Educación (n.d.) [Ecuadorian Ministry of Education, Especialized and Inclusive Education] states that:

> Plantea el reconocimiento de las diferencias y el respeto de la diversidad, asegura el cumplimiento del principio de equiparación de oportunidades, como un aspecto de enriquecimiento. Se caracteriza por proveer un conjunto de servicios, recursos humanos y técnicos, conocimientos especializados y ayudas, con el propósito de asegurar aprendizajes de calidad a los estudiantes.

This means that every teaching area should have favorable environments to nurture visually impaired students' educational development. Besides, they will feel emotionally and intellectually accepted in the society to be capable of being more independent and self-confident. Therefore, having in mind the evolution of the technology within the educative context, visually impaired students have gone from using the very successful braille system to the new trend of screen readers, which has a high relevance and impact on the way they learn. As a result, this research looks for the real perspectives of using these technological tools in EFL students' classrooms.

1.2. Problem statement

Currently, many technological applications have been developed in order to improve human's lifestyles. In this way, the education field has been benefited in many aspects, according to this, the English as a Foreign Language (EFL) process has used these technological innovations for good and many productive solutions have been set up thanks to these so-called changes. One of these solutions includes the implementation of a more appropriate learning environment for students with visual impairments in their English classes. That is why, the use of technology in class like screen readers is purely essential in these students' learning processes in order for them to keep up with the speed and the way other students with any disability learn a foreign language. Besides, this is very much related to what Cox & Dykes (2001) cite "Teachers should introduce students with visual impairments to materials and equipment used in the same way and at the same depth as other students understand visual input" (p.72).

Thus, personal experiences working with visually impaired students establish the foundations for this phenomenological study which aims to present an extensive description of the experiences and beliefs of EFL visually impaired students about the use of screen readers in their classes at an Ecuadorian university. As there is not too much information in this field in Ecuador, the relevance of this study highlights the essential information to be taken into consideration within the learning process, presenting the use of screen readers in learning English. Undoubtedly, visually impaired students go through difficulties when interacting with a complex outline via screen reader, and their learning process tends to be affected in a negative way. That is why, a deep understanding is needed to highlight the factors, benefits and aspects that using screen readers has regarding the demand of more friendly learning environments for people with any disability. In addition, knowing how VI student use different assistive tools might make us understand better how the English learning process is being developed in an inclusive environment. According to the existing body of literature, inclusion is essential in a

disabled person's life development; in fact, this encompasses the different advances in terms of technology, education, professional growth etc; and from my own experience I would say that this topic that must be still considered when talking about educative curricular changes because different researches have shown that VI students started using tools like screen readers to acquire knowledge due to the effective progress and benefits they got from using these learning tools. The experience I had with a VI student was really rewarding and impacted my life in such a way that I wonder if I there is someone else who is going through this situation by looking for a deepest comprehension of this topic. Actually, it would be really interesting to know what others can research in order to keep finding or creating effective ways of teaching and learning a VI student. Teachers are not exempt from making mistakes so it will always be necessary to continue investigating to improve our professional practices.

1.3. Justification

The aim of this study is to reflect the different experiences and beliefs EFL visually impaired students and their teachers about using screen readers in class. It can be identified that there is insufficient information about this situation and this study will highlight this by showing the changes and the different facts that affect the EFL learning process of a visually impaired student using screen readers in class. Also, it will let other teachers realize about the benefits of technological tools for visually impaired students while they learn a language and how they feel about working in this way. The deep understanding of this phenomenological fact will let people clarify what is the real learning environment of visually impaired students, in order to improve the different educative processes implemented within a class.

In addition, the body of the literature review establishes that using assistive technology like screen readers is still being implemented in different fields, but it is not completely well-known by professionals or VI people. Besides, different studies do not mention the entire affection that screen readers have in an English foreign language classroom; they describe how

this issue can be implemented and automatized in different professional and academic fields, but not how this works on learning a second language. That is why, it is necessary to carry out this research to find solutions to this educational issue. All of the information, that has been gathered in these research documents, shows that despite the programs and processes that the governments have applied, the real inclusive education has not succeeded yet, and it is worth to keep investigating, and creating projects that the society can take advantage of.

1.4. Research Objectives

1.4.1. General objective.

- To describe teachers and English Foreign Language (EFL) visually impaired students' experience and perceptions about using screen readers in English classes.

1.4.2. Specific objectives.

- To explore students' experience about using screen readers in English class.
- To elucidate teachers' experience and perceptions working with visually impaired students who use screen readers in class.
- To reveal the main benefits that teachers and visually impaired students attribute to the use of screen readers in English class.

1.5. Research Question

- What are the teachers and visually impaired EFL students' experience and perceptions of using screen readers in class?

1.5.1. Sub-research questions.

- How do students define their experiences and perceptions about using screen readers in English class?
- How do teachers describe their experiences and perceptions working with visually impaired students who use screen readers in class?
- What are the main benefits of using screen readers in English class?

1.6. Significance

A famous activist Hellen Keller's quote mentions "Blind people are just like seeing people in the dark. The loss of sight does not impair the qualities of mind and heart". That is why, this research looks for clarifications of how teachers and visually impaired students feel at the moment of learning. Having lost their sight is not a limitation that can impede a person to work independently or become successful.

Therefore, this study is opportune in the Ecuadorian educative field, due to the fact that teachers and different educative institutions can have a clearer context of what happens within a classroom having visually impaired students, and how different technological tools affect and improve the learning process. This research can lead teachers to the creation of innovative plans or solutions to help people with disabilities to be more independent and confident in their language studies.

1.7. Definition of terms

Affective Filter Hypothesis.- Krahnke & Krashen (1983) cites that "The Affective Filter hypothesis states how affective factors relate to the second language acquisition process." (p. 30). That is, feelings subconsciously hinder the learner's acquisition of a foreign language.

Assistive Information Technology (AIT).- It is defined as "an item , piece of equipment or product system whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain or improve functional capabilities of a child with a disability." (Disabilities & Disabilities, 1997, p.42).

Braille.- According to Perkins Braille (n.d.) "Braille is the system of touch reading and writing which utilizes raised dots to represent the letters of the print alphabet for persons who are blind." (p. 1).

EFL.- English as a Foreign Language refers to a language from another country that is not similar to our mother tongue.

Handicapped.- It refers to a any type of disability (mental or physical) that a person can have as a limitation of his or her growth process.

Inclusion.- According to UNESCO (2013) inclusion is seen as "a dynamic approach of responding positively to pupil diversity and of seeing individual differences not as problems, but as opportunities for enriching learning." (p.12)

Input Hypothesis.- According to Er (2001) in this hypothesis".. acquisition is realized if the learner understands the input given to him, makes it essential that the teacher, the source of the input in a classroom setting, should not be dependent on a method based on mechanical drills." (p.21)

JAWS.- Blind and Low Vision Group of the company Freedom Scientific (n.d.) states that this software "provides speech and Braille output for the most popular computer applications on your PC. You will be able to navigate the Internet, write a document, read an email and create presentations from your office, remote desktop, or from home."

Language Acquisition Theory (LAT).- Krahnke & Krashen (1983) considers that this acquisition theory is the significant communication in the target language where speakers not always pay attention to the utterances' forms but to the main message they are transmitting.

Ley Orgánica de Discapacidades.- It is the sets of norms and rules that support disabled people in any kind of situation by giving them a safe environment and enough resource to grow up and live in good conditions.

LOEI.- Ley Orgánica de Educación Intercultural lets every citizenship to study in any public institution. It makes sure that every individual have the enough guarantees to enter into an educative system.

NVDA.- Nonvisual Desktop Access allows blind and vision impaired people to access and interact with the Windows operating system and many third party applications.

Screen reader.- A screen reader is a software application that enables people with severe visual impairments to use a computer.

Visually impaired.- It is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses.

1.8. Delimitations

- This study addressed 2 teachers and 3 EFL VI students from a private university about their experience and perceptions of using screen readers in class.
- The population of this study involved young and old participants, women and men of the language institute of a superior institution in Quito.

1.9. Limitations

- There is not much research about the use and benefits of screen readers in Ecuador. However, in the international field there are some studies which still do not address this issue directly with EFL environment and screen readers.
- Since this study is about participants' perceptions, the information might vary in the whole process research.
- The answers of each participant may be altered according to each of their personal criteria.
- There is not a specific theory to describe the process of using screen readers in an EFL classroom.
- In terms of technology skills, the participants might show they are not experts in managing different assistive tools, which might affect the conclusions about this study and possible recommendations.

1.10. Summary of the chapter

In general, it has been seen that technological issues for helping disabled people is an important topic to research, however, there is still a lack of commitment and support from authorities to integrate this topic in Ecuador's research field. Inclusive education in this country is represented and discussed in different laws and policies, but just in words; inclusive education is not well-applied in many educative institutions in real life though.

For this reason, it has been necessary to study this issue to know what is the real experience teachers and VI students have when using assistive technology in class. In fact, the specific environment of this study is EFL classes due to the absence of research about this in Ecuador. Besides, different gaps have shown that it is essential to have knowledge about this in order to improve many professionals' way of teaching as well as the education for VI students.

CHAPTER II

Literature Review

The literature review of these study is divided into a thematically way, following these contents:

1. Education for visually impaired people
2. Ecuadorian inclusive education
3. Assistive Technology - screen readers
4. Theories and Models supporting Assistive Technology
5. English as a foreign language in the teaching & learning process of visually impaired students

This literature review is organized in this way because the research needs to cover the general as well as precise specifications about the problem of study. In the first section, considerations about general education for visually impaired students are mentioned to describe how this process has been evolved through the first traditional use of braille and its features. Then, the second section goes on describing how Ecuador has faced this situation by applying inclusive laws in its constitution in favor of handicapped people. On the other hand, the third section includes significant considerations about Assistive Technology which highlights screen readers' features and benefits as an important tool to be used in class by visually impaired students. Finally, the fourth section refers to the way in which visually impaired students develop the EFL learning process in class through the use of screen readers.

2.1. Education for visually impaired people

Throughout the time, education and the educative institutions have been changing and the necessity of implementing and covering all of the students' demands is growing at a high speed. Lowenfeld (1963) states that Education should support the Visually Impaired (VI)

people with a more real environment to nurture the self-confidence, and to deal with these real contexts in order for VI people to feel that they are accepted as independent individuals.

The big issue is how society behaviors according to these relevant social topics. In fact, culture is also a strong factor for developing norms to help people with any disability. In terms of cultural and social aspects, theorists like Barnes and Oliver (1993) stated that disability is not only the result of body anomaly, but also of social and economic environments that belittle impaired people in participating in conventional social activities. According to this social model, it is said that society must promote the social inclusion in order to boost significant skills that people with disabilities can develop. Nowadays, in Ecuador policies and norms are working on strengthening movements to reduce oppression and discrimination against these people. In terms of education, these processes are key factors to support VI students' learning process and professional growth.

On the other hand, a concept that arises from these perceptions is the inclusive special education that according to Hornby (2015) is a complex concept that encompasses the significance of diversity, human rights' concerns, social justice and impartially matters, along with a social socio-political model for disabled people. However, the term inclusion is not well-understood yet, due to the fact that underdeveloped countries do not have the necessary conditions to apply the implication that this concept carries. For instance, there should be adequate spaces and resources to develop a real inclusive educative program.

Besides, in order to develop any supportive program people must understand well the concept of disability. Hence, the degree of disability allows educators analyze a better individualized special education. However, in Ecuador there is not a clear context about the concept of education for disabled people due to the fact that there are not still places and programs that are adapted to educate in this case a VI student. On the other hand, and from the educational perspective the following statement describes:

> …the type of disability and its degree of severity underline the potential need for individualized special education services (including inclusive settings). The general concept of disability contributes little to the selection of specific treatment approaches or appropriate educational programs. Moreover, students with exclusively physical disabilities do not usually need special education but social and architectural accommodations. (Anastasiou & Kauffman, 2013, p. 140)

2.2. Ecuadorian inclusive education

As mentioned in the previous passages Gallegos (2015) alludes that Diversity in an inclusive field refers to the individual naturalness that makes one person different from the others and in some Ecuadorian institutions it has been seen that diversity is recognized in a very natural way letting teachers give accurate solutions and answers related to the topic's inquiries.

Besides, the Ministry of Education has created the so called "Ley Orgánica de Discapacidades" by Asamblea Nacional República del Ecuador (2012), following the framework of Buen Vivir, by which it guarantees the right of education for disabled people, implementing more inclusive programs in the educative institutions. In addition, Donoso (2013) states that Ecuador has a big challenge in widening and improving high-quality spaces for disabled people to make them be part of the educative system and encourage them to increase their academic progress avoiding the school dropout.

On the other hand, Ramírez, González, and Llautong (2017) mentions the role of teachers in the inclusive special education as key agents to turn a really difficult environment to learn into a constructive one including different students' needs. In relation with this Ainscow (2003) states that due to the different changes (curriculum, technological, and teaching and learning aspects, etc.) affecting the role of education, the traditional ways of teaching are no longer any more useful. Therefore, students are surrounded by a current stimulating environment and they need to move forward with the educational changes as well. This means

that schools' curriculum and policies must change and include new systems of teaching & learning in a pedagogical environment.

In accordance with Ley Orgánica de Discapacidades by Asamblea Nacional República del Ecuador (2012), in the Article 28 about Inclusive Education, the constitution stablishes that:

> La autoridad educativa nacional implementará las medidas pertinentes, para promover la inclusión de estudiantes con necesidades educativas especiales que requieran apoyos técnico tecnológicos y humanos, tales como personal especializado, temporales o permanentes y/o adaptaciones curriculares y de accesibilidad física, comunicacional y espacios de aprendizaje, en un establecimiento de educación escolarizada. (p.11)

Currently, in Ecuador more and more institutions are implementing environments according to the demands of each student to make the teaching and learning process more personalized and meaningful for them. Therefore, the need of implementing a more adequate space to help people with different disabilities is highly required and completely applicable.

Another big issue is the disabled students' families' knowledge about this topic because the concept of disability has gone through a historical evolution and the families, who do not know about the real concept, can become an obstacle for a VI student's personal and professional growth.

In this sense, the inclusive education does not only happen at schools, but also at home. If parents or family relatives do not get familiar with the inclusive education's implications, people with disabilities will not succeed and the limitations will increase in their social development.

2.3. Assistive Technology

Since education has been evolving to cover students' different needs, Arnesen (1996) points out that at the end of the twentieth century many countries had implemented several libraries with books and magazines on tapes. Besides, personal computers programmed with

Braille were the most modern progress in regard to translations of printed text into spoken language. Likewise, the evolution of technology has reached different education subjects and fields to improve the quality of teaching and learning. Svensson (2006) highlights the importance of the traditional Braille books that were very laborious to create and design but they were an important tool to lead visually impaired students to achieve their goals while learning. He also recognizes that there are other useful technological aids that can boost visually impaired students' independence like screen readers as an effective way to help visually impaired student's learning process.

Kearns, Frey, & Mcmorland (2013) refer to assistive devices as machine-understandable by using a visual design to convey significant information. Instructors can start building inclusive materials based on the behavior and experience of VI users to have authentic accessibility. The use of assistive technology by VI students offers a great advantage when learning whatever kind of knowledge. It has been seen that this also benefits the amount of time it takes to perform an activity, and in terms of learning vocabulary, it reinforces different systematic categories to be used in order to express themselves freely in a foreign language. In addition, there have been many relevant international studies that have supported this important topic. In the following section, some studies are described to see how assistive technology and screen readers.

2.3.1. International studies on assistive technology (screen readers)

There has been a dramatic improvement in the last years, the biggest barrier to VI users, images without alternative text, is still an issue. As new technological innovations have emerged, so have different issues faced by VI users. That is why, many studies have raised from this concern as shown in the following researches:

A study testing the accessibility of a big amount of US higher institutions websites examined the top 10 web pages as well as PDF documents from each establishment (Thompson,

Comden, Ferguson, Burgstahler, & Moore, 2013). This study discovered a long list of issues about missing alternative text for images. In addition, there was a percentage of 66.2% of the PDF documents that were not accessible at all. In the end, this study showed that some institutions with a more formal accessibility system had higher accessibility ratings. In this sense, the study shows the importance of adjusting different educative resource in order to help disabled students to have better academic improvements.

Besides, another study, that researched about the use of paper braille and assistive technology among 16-22 year-old students, and their attitude toward these techniques in high school and college. D'Andrea (2012) discovered that the results were basically based on two categories: "(1) the students' practices and (2) preferences for completing school work using braille and technology" (p. 588). As a result , other three themes arose according to the students' practices:

1. *The devices or tools they used for reading and writing*: where all of the students informed using computers with screen readers software as well as some kind of braille-compatible assistant. In this case, they mentioned that the most frequent tools were BrailleNote and JAWS screen readings software. There was a remarkable difference between high school and college users; high school students often used to have their textbooks in Braille, whereas college students used electronic materials and very few paper braille resources.

2. *The tasks they performed using specific devices and tools*: here college students had a great advantage against high school students, because college individuals seemed to be more aware of technology uses than high school students. The reason is that older students wanted to have a neat presentation to hand in to their teachers, and they also had demanding professionals who asked them for a good final work.

3. *The way they learned those practices*: Here, only one student mentioned he learned from his teacher at school, the rest of them have learnt to use technology through their friends or specialized professionals.

On the other hand, in the second category from preferences and opinions about braille and technology three more themes appeared:

1. *Preferences about individual devices:* Students made their decision based on the cost of the type of assistive device; therefore, they preferred using off-the-shelf devices like laptops, and specialized devices.

2. *Choosing tools for specific tasks:* First, some students recommended using technology because it was faster than braille. Second, the size of the books in braille is a disadvantage. Finally, they had divided opinions about both resources, but in the end they agreed on using braille and technology should go hand in hand.

3.*The role of teachers in learning to use technology:* Students' opinions stated that teachers should also get familiar with braille and assistive technology resources in order to guide them properly.

D'Andrea (2012) concludes that "students cannot be generalized " (p. 596), and teachers should identify their needs in order to offer a great variety of experiences for them within the classroom. Implementing good practices and evaluating what oneself is doing inside the class is relevant if we really want to get good results and the good process for our students. It is impossible to have a good quality of education if teachers and authorities do not have enough tools and interest to include change in the teaching & learning environment.

A study about Implementation of Assistive Technology (AT) with Students Who Are Visually Impaired (Abner & Lahm, 2002), developed in Kentucky and applied to teachers in this area, showed that only 51% of the teachers felt capable of teaching their pupils to sue technology, but few teachers used real assistive technology. The reason, they did not use AT is

the lack of specific training in their professional studies, and 99% of the respondents stated that they really need this training. Another disadvantage that was identified was the lack of available support from the main coordinator for teachers related to AT. Despite having enough computer-based technologies, teachers did not feel capable of explaining their students about the use of AT. On the other hand, teachers highlighted workshops are a very useful tool to learn about this issue. As a result, it is considered that the lack of interest and support may affect directly student's desire of using AT.

In addition, another national study about assistive technology competencies for teachers of students with visual impairments reflected on the lack of an instructional text book that let teachers and students know about the use of assistive technology for faculty. It also states that there is not enough research about this topic. It concluded that professional organizations have not adopted AT competencies for teachers. In spite of the great advance that the world is having with technology, there is still areas like education that still cannot get enough time and funds to update new technology changes. This and other studies have stated that using assistive technologies are very helpful for VI students and other people with any kind of disability; however, there have not been changes yet (Zhou et al., 2012).

Finally, this last study about Assistive Technology for Students with Visual Impairments: Challenges and Needs in Teachers' Preparation Programs and Practice (Zhou, Parker, Smith, & Griffin-Shirley, 2011), developed a survey to a group of 165 teachers of VI students about their assistive technology's perceptions. The results showed that they were not familiar with this issue nor how to teach their students in this way. An amount of 74 AT competencies were examined showing that the half of the participants in this study knew little or nothing about the implications of these items. The main issue was the poor confidence teachers had to help their VI students, since they did not have enough information or experience on using AT devices or resources.

2.3.2. Assistive technology (screen readers) studies in Ecuador

Ecuador is still getting familiar with the concepts of Assistive Technology, and it is difficult to standardize and expand these resources in all of the educative institutions in the country. Moreover, the lack of updated technology information does not let educators have access to the whole necessary information to assist and offer their students with a wide range of educational possibilities based on internet or technological resources. Due to this, there have been few studies about the topic in Ecuador and it has been difficult for them to get enough information. However, the following studies try to highlight the need of much more training and knowledge about this issue.

The first study about a Jaws and Lecto-TEXT training manual for high school teachers in the city of Zamora addressed around 50 participants to update them with new information skills about technologies for VI people. The results showed that teachers did not have enough information about this issue, and they did not even know how to use it. In this case, the transition of the information to students was affected. The researcher also found that participants were not well-informed about the general Ecuadorian Law about Disabled people which is really worrying. In addition, the institution where this study took place, did not have enough technological materials to apply a more accessible system in the classrooms. Therefore, the researcher developed a training manual about Jaws (a screen reader) and a lecto-TEXT application for VI students. He recommended that training is the only way in which teachers, students and even authorities can be updated about the latest technology changes, they will see how this will improve the quality of education (Tocto, 2013).

The second study is about EFL VI students' experience in an Ecuadorian NGO that found the same issue that the other studies have discovered, this is the very poor knowledge that many institutions, authorities, teachers and students have about using any device like screen reader or innovative assistive software. This study mentions that very serious problems about

rights and learning environment in an English class. First, the results showed there is not a well-developed curriculum for VI students' education in terms of teaching English nor the rest of the subjects. Second, there a big failure to offer optimal resources to boost the academic progress in any type of educative environment. Third, laws and policies about disabled people's rights aren't clear or applied correctly in the Ecuadorian constitution nor in the real life within society. This means, most of the educative establishments do not have a system of good practices where disabled students can improve and learn better in the same way as the rest of their classmates. Not having the necessary procedures to help them affects directly of their academic and personal growth, even the desire of feeling of success disappears slowly due to this empty of empathy towards the people who need much more help (Bravo, 2017).

The next study is merely about the use of screen readers as technological tools for VI people in a specialized center and a public university in Imbabura province. This study reflects the benefits of using screen readers in different life areas like education, job, personal success, etc. However, there is limited access to these helpful applications, and once again the main issue is the lack of training. Despite this, both places of research have used JAWS and NVDA as part their educative processes; this has helped to reduce accessibility problems to the information. As a result, the authors of this study created a guide about the benefits of screen readers in order to train different authorities, teachers and students about the handling of these tools (Basantes, Guerra, Naranjo, & Ibadango, 2018).

Finally, in 2018 a study about inclusion, technology and education in university levels for VI people reveals that despite the government has implemented and tried to reinforce the inclusive education in all of the aspects, there is not a 100% of accessibility of the whole information needed to progress in the academic field. This study was carried out in three superior institutions in Quito city, the exact places the researcher got the information were from VI people's libraries in this institutions. The results highlight that the technology is taking a

strong place in every Ecuadorian fields, and it is covering a wide range of academic aspects to help VI people develop their skills. Nonetheless, the inclusion policies have not satisfied the needs of this population. This means that Ecuador must still work on developing more systems and projects where disabled people can have the access to new technologies to get to the information they need to be ready for the future (Reyes, 2016).

2.3.3. Assistive Information Technology- Screen readers

Within AT field, many devices can be found, among them screen-readers, screen enlargement applications, mobile phone apps, and so on. All of these resources represent a great advantage as well as a challenging task to learn and strengthen in education.

Assistive Information Technology (AIT) refers to the term "screen reader" through which a person can read a text by a voice synthesizer. He highlights that this program "facilitates the electronic communication and basic browsing" (Llouquet, 2017, p.6). Actually, screen readers were designed especially for people with visual impairments. These programs set a speech output which students use to understand what their computer's screens have. This method is even faster than the traditional method braille because the realia is more accurate. There many programs that can be implemented in class like JAWS, NVDA, Apple Voiceover, among others. Some of the most common will be described then:

2.3.3.1. JAWS.

It is a software, which its acronyms mean Job Access with Speech, created by the Blind and Low Vision Group of the company Freedom Scientific (n.d.) which states that this software "provides speech and Braille output for the most popular computer applications on your PC. You will be able to navigate the Internet, write a document, read an email and create presentations from your office, remote desktop, or from home." This program lets students develop electronic tasks in an easier way and fulfill their expectations related to the technology development.

2.3.3.2. NVDA.

Due to the lately high cost of some screen readers, Michael Curran, who has a visual impairment, started a project in 2006 to create a new technological system supporting Microsoft Windows 2000. He generated a software directed to understanding a computer's interface and web browsing for VI people. This program is NVDA (Nonvisual Desktop Access), NV Access (n.d.) states that this program "allows blind and vision impaired people to access and interact with the Windows operating system and many third party applications." In addition to these enhancing technological improvements, Hayhoe (2014) points out that "there are more radical Transformations of syllabi through assistive technologies. For example, software and hardware has Redefined how students are taught to read and produce writing..." (p.10). In reality, this permits to work with the both basis the traditional techniques as well with the new contemporary technologies like screen readers or speech out voice devices to support VI people not only in their education but also in their daily lives.

Furthermore, Leporini and Paternó (2004) point out that "When interacting with a screen reader, the way in which the information is set out on the page is very important, because what the blind user hears is very different from what sighted users would read from the screen."(p.1) Regarding to this, teachers and stakeholders should get involved in how these programs work to help visually impaired students use them, since most of them are still get used to manage the traditional Braille, it will be also challenging to include these programs in class.

The previous studies and information about this study demonstrates the basis and reasons why this research is being conducted about screen readers. The gaps found have been the root of the whole research, and by which all the literature has been supported including the aim of this research.

The main gap mentioned in the previous studies is the lack of training and knowledge about the use of assistive technology which; in this case, I have highlighted screen readers. This

issue creates a depletion in the educative processes of VI students. First, the absence of support and interest from the authorities avoids teachers and students have access to a better training process about using assistive technology like screen readers (Abner & Lahm, 2002).

The world is changing, and many advances are increasing like technology. The aim of this is to progress in any field, for this reason, it is needed that training programs or text books with instructions about screen readers' use must be developed and included in every institution to have the opportunity to enhance the life style of every citizenship (Zhou et al., 2012). This research stated that letting teachers learn about assistive technology skills to broaden their level of expertise in this field. As a result, the researcher found out that confidence played an important role in order to convey information to their VI students because they did not know how to handle with these technology practices, therefore, they did not know the benefits of this, and how this could change their students' lives.

Regarding these studies, I consider that the main gap that supports this research is the lack of knowledge of the existence and handling of assistive technology by authorities and teachers. Actually, I have been mentioning this in every passage because as participant of the educative process, we need to emphasize the good use and practice of his great advantage, and start applying in our classroom. Despite the fact that some Ecuadorian studies also cover these topics, it is not surprising that this problem exists in a third world country like Ecuador, but that does not take away the fact that we can improve the quality of life of our VI students (Basantes et al., 2018).

Having acknowledged this, it can be said that the absence of knowledge about screen readers' use, affects directly the language learning process for VI students. Most of the studies described previously do not give any detail about the EFL environments related to the use of screen readers or any other assistive technology device. Instead, they only focus on the advantages and disadvantages of them, but they have not investigated in deep about this field,

which is something worrying not only for Ecuador, but also for the rest of the third world countries.

2.4. Conceptual Framework

2.4.1. Theories and Models supporting Assistive Technology

Currently, the field of using Assistive Technology (AT) is somewhat new in the educative areas. Despite this, there has been a big increase of different researches on this topic which has let people develop more theories and models to understand how can disabled students benefit from different technological resources, for instance text-to-speech (screen readers), voice recorders, audio recording software, and so on. In this sense, theories and models like Universal Design Theory for Learning , Cybernetics model or Digital Accessibility provide a deep comprehension of the use of technology in class as a powerful assistant for disabled students' learning process.

2.4.1.1 Universal design (UD).

First, it is vital to mention this theory because it covers many fields for instance education, technology, and architecture. In fact, this theory was born based on architectural guidelines to improve and adequate different spaces for disabled people. This design was created by the famous architect Ronald L. Mace who states that this design gives the opportunity of creating environments for the different needs of people. In this sense, UD has been applied in different fields due to its connection with human rights in every branch.

2.4.1.1.1. UD in information technology.

Information Technology (IT) is becoming a well-known concept around this updated world. Generally, technology is covering a wide range field in this world and even in underdeveloped countries like Ecuador, this area is increasing so fast that most of the educative and economically systems are automatically designed to ease the man's work.

In this sense, IT is an essential process in education, for this reason many applications have been created to encourage students to be more independent and modernized. Besides, in terms of especial education IT plays an extremely important role in letting disabled people learn faster and adequately. For instance, visually impaired people can use a wide range of tools like screen readers (JAWS, NVDA, etc.) or automatized braille systems. In fact, the term used for this systems is Assistive Technology as its name mentions, its aim is to assist people in daily activities they require such as learning, working, researching, etc. According to Burgstahler (2009) there are some guidelines to be applied when talking about Universal Design and IT:

Table 1
Universal Design Guidelines

Guidelines:	
Output and Displays: they are resources which present the information to the user in order to:	Hear information clearly Avoid missing information Have visual output in a clear way.
Input and Controls: this encompasses different means of communication within the devices for instance:	Keyboards Controls and keys Special devices
Manipulations: these all the activities that are carried out by the user such as:	Inserting or removing objects Turning on and off different devices Comprehending the manipulation of the device
Documentation: this aims attention at the operation of commands helping people to have access to the documentation.	
Safety: this involves other different securities from harm in order to avoid hazard warnings.	

Note. Adapted from "Universal design in education: Principles and applications" by S. Burgstahler, 2007, p. 3. Copyright © 2012, 2011, 2009, 2007, 2006, 2005, University of Washington.

Applications following these IT guidelines show the huge possibility of having accessible devices for people with different abilities and disabilities. This aspect represents a great advance mainly in Ecuador being an under developed country that has been dealing with many educational changes in a very short time.

2.4.1.1.2. Universal design for learning.

Regarding the different technological devices previously mentioned, the Universal Design Theory for Learning (UDL) becomes the cornerstone of this study. Even though this theory has its roots from architecture, its main basis can be applied to the education field. This theory states that "the design of products and environments to be usable to the greatest extent possible by people of all ages and abilities" (Story, Mueller, & Mace, 1998). This is, the UDL theory supports the diversity and inclusiveness in the society, focusing on those people with disabilities. It mainly aims to enrich different earning materials, methodologies to let students have the opportunity to acquire a good quality of knowledge in the classroom.

This theory encompasses the following principles:

Table 2
Universal Design Principles

Principles:	Description:
Equitable in use:	The design is profitable for people with disabilities.
Flexibility in use:	The design becomes suitable for every individual's preferences.
Simple and intuitive use:	The use of the design is very understandable.
Perceptible information:	The design conveys information in an effective way.
Tolerance for error:	The design reduces danger and any difficulty for any disabled person.
Low physical effort:	The design is very comfortable to be used.
Size and space for approach and use:	The size and the space of the design is convenient.

Note. Adapted from "The Universal Design File: Designing for People of All Ages and Abilities." by M. Story, J. Mueller, and R. Mace, 1998, NC State University Center for Universal Design ,p. 34-35. Copyright 1998 by NC State University.

On the other hand, UDL offers multiple means that allow learners to integrate knowledge and resources in a handier process to learn. For instance, the multiple means are:

Representation**:** this provides learners several methods of gaining knowledge;

Action and expression: this is formed by all of the possible choice of showing what learners know; and

Action and engagement: this tries to boost motivation and increase challenges for every learner.

According to what Orkwis and McLane (1998) described, there was a meeting with researchers specialized in Universal Design who suggested the following first steps for curriculum developers and teachers:

Table 3
First Steps in Implementing Universal Design

Steps:	
1. Provide all text in digital format.	
2. Provide captions for all audio.	
3. Provide educationally relevant descriptions for images and graphical layouts.	
4. Provide captions and educationally relevant descriptions for video.	
5. Provide cognitive supports for content and activities:	• Summarize big ideas. • Provide scaffolding for learning and generalization. • Build fluency through practice. • Provide assessments for background knowledge. • Include explicit strategies to make clear the goals and methods of instruction.

Note. Adapted from "A curriculum every student can use: Design principles for student access." by R. Orkwis and K. McLane, 1998, VA: ERIC/OSEP Special Project on Interagency Information Dissemination, p. 14-15 (ERIC Document Reproduction Service No. ED423654).

According to Burgstahler (2009) UD should follow these other guidelines:

Class Climate. It implies good practices about high respect values to both diversity and inclusiveness.

Interaction. This stimulates compelling interactions between students and teachers which guarantees accessible communication habits.

Physical Environments and Products. This ensures that all students have accessibility to facilities, materials, and equipment taking into account safety considerations.

Delivery Methods. This includes different accessible instructional methods to all learners.

Information Resources and Technology. Information resources should be appealing and flexible for all students.

Feedback. The feedback should be provided regularly.

Assessment. Assessment periods should be applied regularly by using effective and accessible tools to check student progress.

Accommodation. This aspect should be planned in accordance with students' needs.

2.4.1.2. Cybernetics model.

By all means, it is a must to include and connect this model in this research due its relevance with VI students' virtual education. The cybernetic model is based on the premise that teachers must include automatized process within the classroom which Grover (2016) calls "Classroom Cybernetics". Grover (2016) mentions that this system encompasses three concepts: Constructivism, Conversational theory, and Feedback.

It is vital to understand these aspects to know how this model works inside the classroom. First, constructivism supports this model by explaining that the content that every student learns is unique and related to any accessible supply of any specific knowledge, hence this process builds particular meaning to the taught topic within the class environment. Constructivism is based on learning experiences, and what is important to infer is that these experiences are unique for every individual leading into a unique interpretation and understanding of any language. The next component is the Conversational Theory which was

suggested by Andrew Gordon SpeediePask (1928–1996) an English Cybernetician and Psychologist; this theory's main aim is the 'construction of knowledge'. Grover (2016) states that "The elementary idea of Conversation theory is that learning occurs through conversation about a subject matter of concern between two parties which serves to bring knowledge in public domain and make it acceptable" (p.48). This means that a teacher can stablish a closer relationship with a VI student involving different kinds of dialogues and contexts where the student can feel more confident to learn.

Finally, the concept of 'Feedback' is highly essential in the cybernetics field due to its attempt to improve efficiency in the student surrounded by a class environment in an EFL class. In this sense, Cybernetics in the classroom follows this process to take action in class:

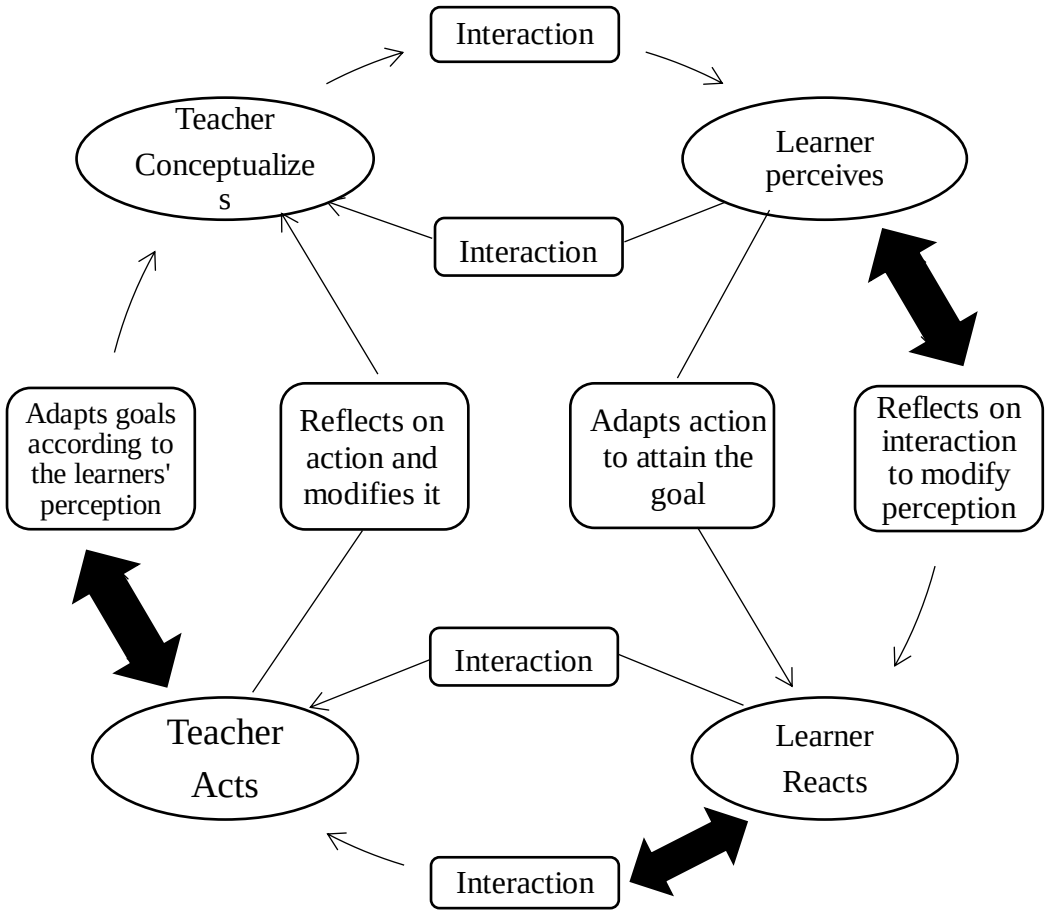

Figure 1. Cybernetics Process in Class.

Adapted from "Classroom Cybernetics: an Approach for Effective and Efficient Classroom Teaching." by V. Grover, 2016, International Journal of Research in Advent Technology, p. 51. Vol.4, No.1, E-ISSN: 2321-9637

The figure shows the whole process of teacher and student's interaction within the classroom applying the Cybernetics model which mainly involves automatized tasks to let in this case VI students have more accessibility at the moment of learning English using assistive technology. Practically, teachers participate in this stage by searching for sophisticated methods which can help students with different disabilities.

2.4.1.3. Digital accessibility.

Another important topic to mention in this research is Digital Accessibility. Even though it is not a theory or model, it is a concept that is worth to describe due its relationship with the new technological advances in education and befits for disabled students. (Ableser & Moore, 2018) cite that Digital Accessibility:

> …focuses on learners who have particular needs related to sensory, physical, and/or cognitive impairments. This often involves coupling content presentations with accommodations to make them accessible to all users—for example, providing text versions of image-based content, which allows a screen reader to interpret that content for students with visual impairments.

In this case, Digital Accessibility is the concept that covers all the advance in education through technology. For instance, as the previous citation establishes, screen readers belong to this evolution and they directly become a great beneficial tool for VI students. These tools offer a flexible environment where the students can develop their cognitive and language skills better. They even can work in the same amount of time as the rest of the students. Here, the most important factor is time, VI students tend to take a lot of time to perform a task and they start feeling uncomfortable, feeling that they cannot learn as fast as the others. In fact, their academic development is affected by these types of situations reducing their levels of enthusiasm and participation in class.

For all these reasons, screen readers play an important role in places that work with VI students. The interface that these applications have is pretty easy to use and its commands are accessible to any VI student. According to the American with Disabilities Act (ADA) there requirements for accessibility are:

- Screen readers that decipher websites for a user with visual impairments.
- Closed-captioned Website videos for individuals with hearing impairments.
- Images that contain alt-text for VI people.
- Websites should be accessible by keyboard for VI users.

All of these requirements show how websites and applications can incorporate Digital Accessibility, and make learning environments more flexible to manage with different students with disabilities. On the other hand, the Web Content Accessibility Guidelines (WCAG) 2.0 (n.d.) offers a strong set of principles with an extended list of guidelines each to make websites more navigable. In summary, the principles are:

Principle 1: Perceivable - Information and user interface components must be presentable to users in ways they can perceive.

Principle 2: Operable - User interface components and navigation must be operable.

Principle 3: Understandable - Information and the operation of user interface must be understandable.

Principle 4: Robust - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

These principles and guidelines emphasize in how learners notice and handle course materials and tasks. Furthermore, teachers and course designers should take into consideration these requirements in order to organize content that can be understandable through several format options. Hence, this content can be shown via many media resources such as videos,

text descriptions, transcripts which can be displayed in screen readers or any application that can be compatible with these resources (Gronseth, 2018).

2.4.2. English as a Foreign Language in the Teaching & Learning Process of Visually Impaired Students

First, it is vital to mention that every step that a teacher or a student takes in a classroom has its own reason; and how or why people do what they do must have a rational explanation. This is, stating underlying theories based on how the teaching and learning process works while acquiring a foreign language must be highlighted in this study.

In addition, it is said that any person chooses to study something for a reason, and the reasons that VI people decided to study language are professional and personal motivation. In the professional field they can find many job and study opportunities by improving their job skills and qualifications. Nowadays, in career advancements every person is required to speak at least two languages or even more in formal jobs. In terms of personal motivation, VI people want to study languages because this lets them improve their linguistic and memory skills. Furthermore, they can access to a wider list of communicative environments, including the possibility to increase their social atmosphere. On the other, not all the VI people can access to a high-quality education of languages because in some countries do not have enough trained teachers to do this nor the adequate material to be used in their classes. Thus, the languages accessibility decreases and makes it harder for VI student to succeed in the areas they desire to improve (GRUNDTVIG LEARNING PARTNERSHIP, 2010).

2.4.2.1. Language acquisition theory.

One of the theories that has been having impact on teaching and learning English is the Language Acquisition Theory where Krahnke & Krashen (1983) considers that acquisition needs significant communication in the target language where speakers not always pay attention to the utterances' forms but to the main message they are transmitting. This is the reason why

visually impaired students learn more how to communicate in another language rather than writing, however, it is important for them to learn all of the skills without any excuse. Within this theory, Krashen developed different hypotheses that are worth to mention when talking about how visually impaired students learn and acquire the English language:

2.4.2.1.1. Input hypothesis.

Although, this concept is somewhat new, it has been much mentioned in Krashen's studies about language acquisition, since its analysis can solve the concern about how people acquire a language. Related to this hypothesis, (Krahnke & Krashen, 1983) alludes that "We acquire … when we understand language that contains structure that is "a little beyond" where we are now" (p. 21). In other words, people can understand a message or idea when they receive a comprehensible input using of all of their extra-linguistic information to understand the language they are perceiving.

2.4.2.1.2. Affective filter hypothesis.

When a student and mainly a VI one acquires a language, emotional factors can affect this process. As human beings, people tend to develop feeling for experiences they go through in the educative process which is deeply surrounded by a lot of these affective factors. That is why, Krahnke and Krashen (1983) claim that "The Affective Filter hypothesis states how affective factors relate to the second language acquisition process" (p. 30). Richards and Rodgers (1976), who are specialists on second and foreign language teaching as well as psycholinguistics, claim that "Krashen sees the learner's emotional state or attitudes as an adjustable filter that freely passes, impedes, or blocks input necessary to acquisition" (p.133). Thus, every students' feeling will either impede or boost the success of a foreign language acquisition.

On the other hand, Mahiri (2018) establishes that "A critical challenge for teacher preparation and professional development programs, however, is to enable teachers to

understand and utilize relevant digital technologies that can be viable resources for learning" (p.6). In the teaching and learning process there should be all the accessibility to resources that let visually impaired students be interested in learning a foreign language.

The field of teaching and learning a foreign language is also joined in the process of including new technologies in class, even more when teachers must face visually impaired students' needs. In the previous years, VI people used to be discriminated and they were not commonly involved in learning activities due to the lack of an adequate system in classes. In this sense, Cox and Dykes (2001) state that "General education teachers who are aware of the implications of visual impairments on students' learning will be able to provide their students with educational opportunities that will lead to successful academic and social experiences" (p.69). Whichever the area or subject could be, every teacher must know about each of his students in order to understand what could be the best way to teach and make them take advantage of each class.

2.4.2.2. Constructivism.

According to Bada and Olusegun (2015) "Constructivism is an approach to teaching and learning based on the premise that cognition (learning) is the result of "mental construction. In other words, students learn by fitting new information together with what they already know" (p.66). Practically, this theory is based on the principle that people learn by their own experiences, and this is why VI students have the necessity of learning independently. If teachers do everything without letting students participate, they will not learn consciously.

On the other hand, if students have the chance to experiment by themselves, they will acquire knowledge in a more solid way. Since constructivism embraces the idea of self-experience, it is vital that VI students try to learn by using different ways to acquire knowledge, and in term of language learning, it is better if they can connect what they learn with their own personal background, where they can feel more confident to practice.

Bada and Olusegun (2015) represent a good conceptualization and differences between a traditional and a constructivist classrooms:

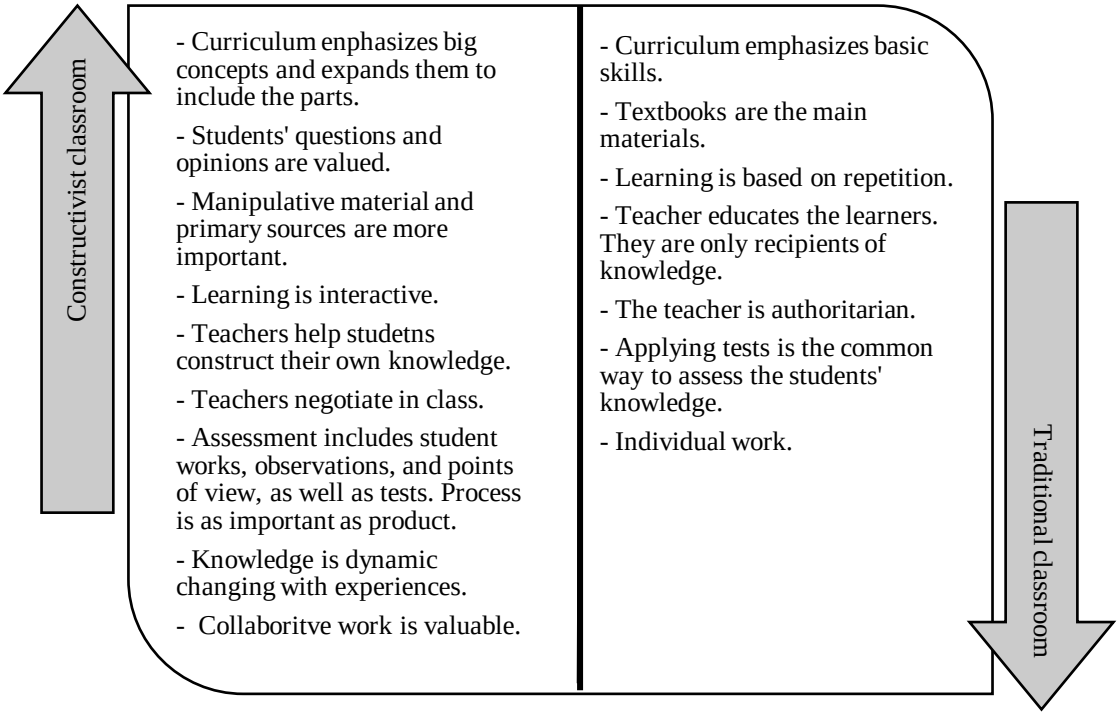

Figure 2. Constructivist and Traditional Classrooms' Differences.

Adapted from "Constructivism Learning Theory: A Paradigm for Teaching and Learning." by Bada and S. Olusegun, 2015, IOSR Journal of Research & Method in Education, p. 68-69. Vol.4, No.1, E-ISSN: 2321-9637

2.4.2.3. Laurillard conversational model.

This model has been taken into account because of all the process it takes for a student to develop a task with the teacher's help. (Laurillard, 1999) states that this model can be used "as an analytical tool by which to judge the contribution of each of the learning media and methods available to university teachers today from lectures to multimedia simulation and tutorials" (p. 114). That is why, this framework provides every student with different interactive opportunities, as well as for teachers who can integrate technological tools in the class. Besides, this model covers four important points:

- Teacher's conception
- Teacher's constructed learning environment
- Student's conception

- Student's specific actions (related to learning tasks)

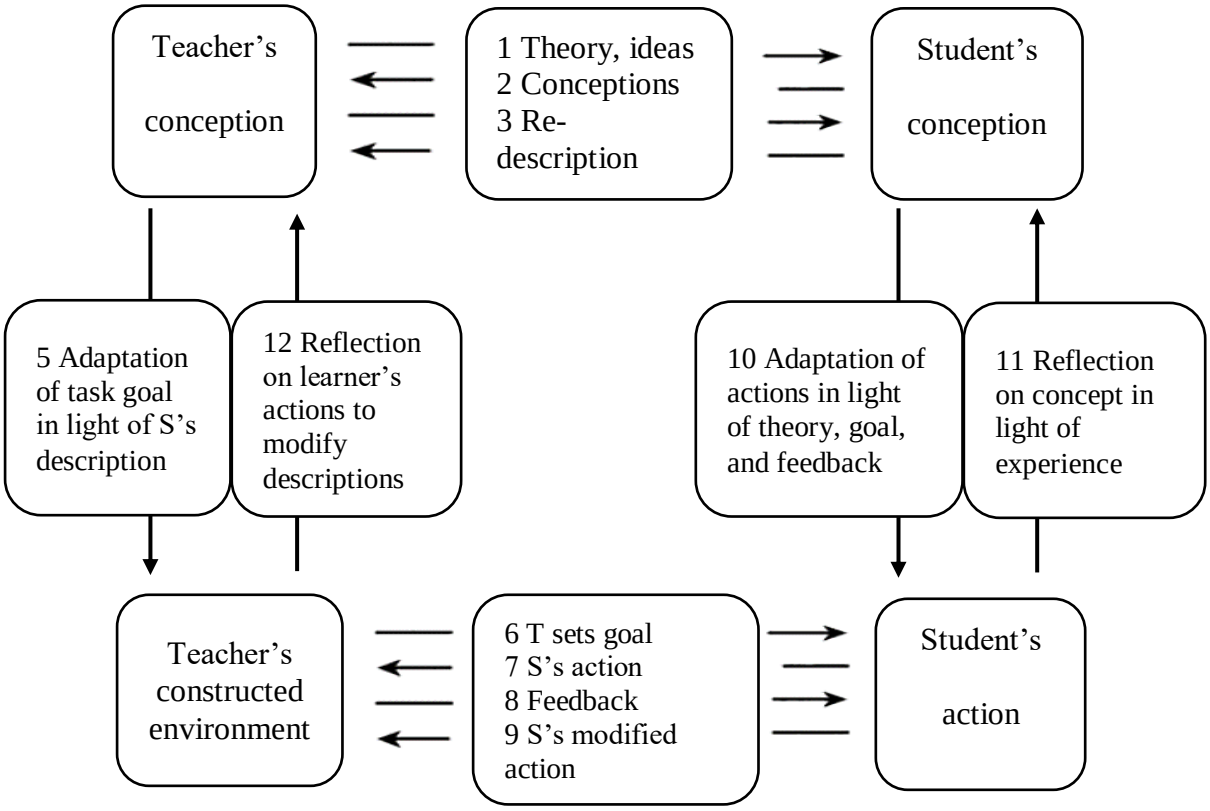

Figure 3. The Conversational Framework Theory Recognizing Useful Activities to Complete the Learning Process.

Adapted from "Rethinking university teaching: A conversational framework for the effective use of learning technologies." by D. Laurillard, 2002, New York, NY: Routledge, p. 87. Copyright 2002 Diana Laurillard.

This model represents how the student can get advantage from teacher's interaction, and he or she can have a clearer feedback his or her work. Furthermore, it is necessary to mention that technology is an important aspect that Laurillard also covers when she says that teachers need to adapt material by using technology which increase students' interaction and collaborative output. In this case, VI students are benefited from this technological changes and new learning environments where they can reflect and integrate their knowledge as well.

2.6. Summary of the chapter

Having considered studies about this topic, one has found that there many things to organize and implement in Ecuadorian education for disabled people. No matter how many certifications a teacher or authority can have; if teachers are not able to lead VI student into

their academic and personal success, it will be difficult to improve the quality of education in this country. For this reason, it is necessary to investigate more about this social issue and find practical solutions for this.

The different gaps found here have shown that even though we are acquiring many spaces to learn about technology, people still do not take advantage of this. In fact, they end up learning what it just necessary for them and not for the rest. This seems like humans keep failing in helping others and disregarding about the social needs that a country has. A shocking fact is that the main rulers of the country have taken for granted inclusive education policies; that is why, disabled students are still affected in all of their stages, primary, high school, and at the end they still keep having problems at the university.

By and large, the evolution and progress of the education for VI people have been a constant struggle for many years, by which the Ecuadorian constitution has implemented regulations related to both inclusive education and new strategies to provide VI people a more comfortable learning environment. Nonetheless, there is still a lack of knowledge in terms of respect and inclusion, which leads to a certain degree of marginalization towards people with disabilities. In this case, there will always be something to do and improve in the inclusive education regulation. On the other hand, in the field of English as a foreign language teaching and learning process, there is evidence where certain changes have developed inside the classroom like implementing braille materials or the use of screen readers, unfortunately, not all of the educative institutions have had the opportunity to run these so-called changed regarding to an appropriate inclusion of people with visual impairments. In the long run, what matters is giving the necessary help to make visually impaired students feel as comfortable and as much independent as possible by giving them useful tools like screen readers or materials that can nurture their knowledge.

CHAPTER III

Methodology

3.1 Research Approach

This current research had a qualitative approach. As stated by Hernández, Fernández, and Baptista (2014), the qualitative approach focuses on understanding the phenomenon, exploring them from the participants' perspectives in a natural environment about their real context. Therefore, the inclusion of the visually impaired participants as well as their teachers within this study is merely important to get a deep comprehension of how they went through their current EFL process. For these reasons, interpretation was applied to know how the participants assume their reality according to their experiences and perceptions.

Since the aim of the study was to describe the perceptions and experiences of the participants, a qualitative approach fitted into this process perfectly; it strengthened the research by having a wide range of points of view from teachers and students who have gone through the experience of using screen readers in class; hence, the findings were deeply related to a more personal understanding representing relevant qualitative findings.

In this sense, it was necessary to understand that this research focused on the fundamental nature of knowledge, that is why, this study was guided by philosophical research axioms in order to understand what the reality and existence of the topic of this study was. Within this stage, the different philosophical axioms that this investigation was based on were the ontology, epistemology, and axiology.

First, ontology is what someone believes about the nature of reality of the object of the study. For this reason, this research aimed to study the real experiences of the participants within its natural environment which is the classroom, and how meaningful these experiences were according to the subjects of study . Then, epistemology inquires about how individuals get knowledge allowing the research to identify the different processes that researchers develop

to investigate the truth with different results . Besides, axiology refers to what values can be involved in the research as well as the different perceptions that the researcher can get from the participants. And finally, logic, which studies the different effective arguments that people infer from their reality, guided this study through understanding the position and interpretation from the perspectives of each studied individual (McGregor & Murnane, 2010). Therefore, this research used an inductive logic to find out the truth through participants' own reflections and criteria from what they really went through in their lives.

Having discussed the main four methodological axioms for this kind of research, it is merely necessary to mention that the paradigm of this approach was the post-positivism, which encompassed the principles and process of this research. "Rather than testing hypothesis, post-positivistic research generates hypotheses through inductive reasoning." (McGregor & Murnane, 2010, p.422). This means that this paradigm emphasized on discovering the implications in the field of this study. In other words, this research can develop new assumptions that might be further investigated.

3.2 Research Method

As the purpose of this research was to describe teachers and English Foreign Language (EFL) visually impaired students' experience and perceptions about using screen readers in English classes, a phenomenological approach was applied due to the fact that it intended to offer a profound understanding about how the participants experience a phenomenon regarding the use of screen readers. According to Cropley (2015) the main concern of this type of methodology is based on determining how the participants experience the phenomenon and how they feel about it while the investigation takes place. Using this method provided a clearer concept and vision of how participants dealt with the subject of study in their real environment.

Having mentioned the previous method above, from the stated methodology, the studied phenomenon was related to the benefits that the use of innovative technological tools like screen

readers bring about in the learning process, so it was necessary to have the direct input and opinion of the participants to know how they feel about this topic which is evolving in the current learning environment. In fact, Sokolowski (2000) stated that:

> ¨Phenomenological statements, like philosophical statements, state the obvious and the necessary. They tell us what we already know. They are not new information, but even if not new, they can still be important and illuminating, because we often are very confused about just such trivialities and necessities.¨ (p. 57)

In this case, using this method enlightened the facts and different characteristics that the problem of study had, and definitely, it led into possible innovative solutions from the same participants included in this study.

Regarding this, the following research questions guided this study:

Main research question

What are the teachers and visually impaired EFL students' experience and perceptions of using screen readers in class?

Sub-research questions.

- How do students define their experiences and perceptions about using screen readers in English class?
- How do teachers describe their experiences and perceptions working with visually impaired students who use screen readers in class?
- What are the main benefits of using screen readers in English class?

3.3 Population and Sample

In this research, a non-probabilistic purposeful homogenous sample was used. Patton (2002) provides the following explanation of purposeful sampling:

> The logic and power of purposeful sampling lie in selecting information-rich cases for in-depth study. Information-rich cases are those from which one can learn a great deal

about issues of central importance to the purpose of the inquiry…Studying information-rich cases yields insights and in-depth understanding (p. 230)

By this explanation, and under a post-positivism paradigm "studies occur in small groups rather than on a large-scale." (McGregor & Murnane, 2010, p. 422). For this reason, it can be said that a small sample was carefully selected, because they reflected what the participants' thoughts were according to the topic of study. The participants were five people among one teacher, one teacher (administrator) and three visually impaired students from the place of research, who have mainly experienced the use of screen readers while learning a foreign language within the classroom.

The participants had entire knowledge about the learning process, which was being applied in the institution, hence, this offered a more accessible environment where to investigate and get accurate results.

When the homogenous sample was employed in this study, the two teachers were selected because they have had visually impaired students using screen readers in their classes, and they knew how the progress and process of this technological tools were inside the class. Finally, the three visually impaired students played an essential role due to their knowledge and experiences studying surrounded by a formal instruction in English.

López (2004) mentions that the qualitative sample is mainly to rely on situations that have relevant and rich information about the topic. That is why, the participants were analyzed according to the characteristics they had in relation to the study. Besides, the way in which the sample was chosen established a clear relationship between the research problem and its objectives ensuring accurate answers to the research inquiries.

3.4 Tools and Techniques

As Hernández et al. (2014) mentions, the qualitative research looks for conceptions, mental processes, beliefs and so on to gain a high understanding in order to solve research

questions from the study. In this way, very flexible techniques and instruments have been adopted to collect data in a successful and comprehensive way. On the other hand, as an inductive analysis was applied and according to Thomas (2006) since the main purpose was to clarify the findings from the several coded data interpretations, and to outline these assumptions in regard to the participants' experiences. This meant that the results were valuable to make decisions and changes within the phenomenon.

Besides, the post-positivism paradigm established that "Methods could include case studies, storytelling, or content or thematic analysis of interview transcripts." (McGregor & Murnane, 2010, p. 423). In this sense, a semi-structured interview technique let the research keep in touch with the participants closely to know about what they thought of the use of screen readers in class. In addition, an informal interview was developed to get as much information as possible to design an accurate semi- structured questionnaire that encompassed the participants' characteristics, which was useful for acquiring the required aspects for the results analysis and their interpretation. Developing a well-structured instrument was a way to get the participants involved seriously concerning the given situations; furthermore, it made the way for discussions and new ideas to offer effective solution in this research.

According to this, two semi-structured interviews were developed: one for VI students and the other one for teachers. The students' interviews contained sixteen questions while the teachers' interview had eighteen questions in total (see Appendix B - Instruments) regarding the research questions established for this study. In addition, it is vital to mention that these instruments were validated through a pilot-testing and an expert audit which let me adapt the questions of each interview better to make it more understandable for the participants and without losing the picture of the study.

Once the expert audit and the pilot-testing showed favorable results from the structure of these wo interviews, I decided to administer them to participants.

3.4.1. Data analysis

In order to analyze the data from the instrument of the study I used a process proposed by Miles, Huberman, and Saldana (2014) who established three sub-processes linked to each other to develop a qualitative analysis in a clearer (1) data condensation, (2) data display, and (3) conclusion drawing/verification. This process let me use an inductive analysis from the results connecting them to the existing body of the literature.

First, it was necessary to reduce the information given by the participants in order to find the elemental units of information that are relevant for this study. This included separation, classification and synthesis of the results (Miles et al., 2014). This data collection process was developed form the very beginning of the interviewing process due to the interaction that the participants were going to have during this research stage. In this sense, the participants' interviews were audio recorded and then transcribed. It was necessary to fully review the recordings to have a clear comprehension of the data. Therefore, when I transcribed these results I developed a question matrix which displayed each response according to the interviews questions. Then, according to Miles, Huberman, and Saldana (2014) I applied a coding cycle called data condensation where I needed to separate the a collected results into different units of analysis in order to classify them the different categories. Then, I used the In Vivo coding method where I had to find patterns of coincidence and synthetize the most relevant results to be discussed in the Chapter 4. Finally, I used member checks to validate the findings of this study and included their criteria during the discussion of the results. Furthermore, I related the finding to the theory existing in the body of theoretical framework.

The discussion of findings was developed in such an organized way that the reflexive insights from the participants are more relevant. All of the three sub-process leaded into the creation and explanation of the conclusions and the final proposal from this study.

3.4.2. Strategies for Validating findings

The strategies that were used to validate and establish trustworthiness in this study were based on a triangulation of data source by Creswell (2013). This let me assure the credibility if this study. This means that I linked the findings, the theory from the existing body of literature, and my own experience related to this subject of study. Then, I used member checks to validate the responses that the participants stated in order for them to verify the direct quotes I was using in the moment of discussing the results Creswell, (2013). In order to do this the participant received the transcript to make sure that I was suing the exact information they gave me. Furthermore, in order to secure transferability , I used a thick description of the findings to respect the voices of the participants. In this way, I can capture the real perceptions of the participants and the connections they have according to this study Ponterotto (2006). Dependability and confirmability was assured by reflexing in every step of the discussion of findings (Creswell, 2013).

3. 5 Ethic Considerations

As a legal requirement, a formal letter of consent was sent and signed to the participants to authorize their volunteer involvement in the investigation. On the other hand, anonymity was taken into consideration, so the names and personal information of the participants were considered as delicate information in this study. Hernández et al. (2014) says that "Por cuestiones de ética, es preciso apegarse al principio de confidencialidad. Para esto, es posible sustituir el nombre verdadero de los participantes por códigos, números, iniciales, apodos u otros nombres…", (p. 424). [For ethical reasons, it is precise to follow the principle of confidentiality. For this, it is possible to replace the real name of the participants with codes, numbers, initials, nicknames or other names]. In fact, this research assured the confidentiality and the accessibility of the information to the participants in every aspect including their personal information as well as their own participation in this study.

CHAPTER IV

4.1. Discussion of Main Findings

In this chapter, I present and discuss the findings of this qualitative phenomenological study that was conducted with three VI students and two teachers from a superior institution in Quito. The purpose of this phenomenological study was to describe the experience and perceptions that EFL teachers and visually impaired students have about using screen readers in English class. This study aimed to answer the following research questions:

4.1.1. Main Research Question

- What are the teachers and visually impaired EFL students' experience and perceptions of using screen readers in class?

4.1.1.2. Sub-research questions.

- How do students define their experiences and perceptions about using screen readers in English class?
- How do teachers describe their experiences and perceptions about working with visually impaired students who use screen readers in class?
- What are the main benefits of using screen readers in English class?

This chapter presents a structured summary from all the information gathered. In this case, this information was transcribed and ordered according to the categories that appeared in the interviews' responses.

Therefore, this chapter is composed of three sections that present the findings from the participants' responses in the individual interviews. The first section of this chapter describes the context and subjects of this study; it briefly describes both the general characteristics of all five participants of which three of them were visually impaired students and the other two were EFL teachers who have experienced working with VI students.

The descriptions are organized in the following into two sections (1) students results and (2) teachers' results. The first section is detailed three themes: (1) **experience about using screen readers**; (2) **perceptions about using screen readers**; and (3) **screen reader's benefits and expectations**. Each section of this chapter provides an analysis of the data as they relate to the research questions. Then, it describes the topics that appeared from the participants' responses and how these topics relate to other studies.

4.1.2. Description of the Context of the Study and the Participants

4.1.2.1. Description of the context of the study.

The study was carried out in a private superior institution located in the capital of Ecuador, Quito. This university was chosen because its work has linked to this topic of the study. In fact, this university is recognized for working with students with different disabilities. It also offers master programs related to education for disabled people.

The particular setting of this study was located at English institute from this university. Which offers different English levels from 1st to 10th level. It has also been working with Cambridge preparation for international exams. Besides, it has collaborated with the tiflo library to work on some adaptions mainly for visually impaired students.

4.1.2.2. Description of participants.

Table 4
Description of the participants

STUDENTS				**TEACHERS**			
Names	Gender	Completed English levels	Vision state	Names	Gender	Years of experience	Area
Chris	M	10 levels (Sufficiency: B1+)	Total loss of vision	Zoili	F	8	English teacher, Member of the evaluation department.

Bladi	M	10 levels (Sufficiency: B1+)	Total loss of vision	Jorge	M	12	English teachers, Disabled students' development Coordinator
Lucy	F	4 levels (Pre-intermediate: A2+)	Total loss of vision				

4.1.3. Results: Categories

After working on the components of data analysis, the following categories emerged from the information gathered in the students' interviews:

4.1.3.1. Students' interview.

Table 5
Students' Interview

CATEGORY	SUB-CATEGORIES
Experience about using screen readers	A. Inclusive education's evolution for visually impaired students B. First English class' insights at university C. VI students' language learning weaknesses D. Assistive resources for VI students E. Assistive technology used in English class: Screen Readers F. Learning experience about how to use a screen reader G. Activities using screen readers in English class and skills improvement
Perceptions about using screen readers and teachers' reactions	A. Students' perception on using screen readers' in EFL classes B. Teachers' preparation to teach English to a VI student. C. Teachers' reaction about using screen readers in class while they teach.
	A. Benefits of using screen readers.

Screen readers' benefits and expectations	B. VI learners' expectations about screen readers and their English teachers

The following section provides an analysis of the data in relation to the research questions for this study. The information is organized according to each research question separately and the main points are summarized.

Research Question #1

How do students define their experiences about using screen readers in English class?

Beliefs

The data studied related to this research question derived from the questions 1, 2, 3, 4, 5, 6, 7, 8 and 9 on the interview protocol. The insights of the participants were coded primarily on similarities and essential facts from their experiences. The responses of the participants to the experience regarding research question # 1 were organized under the following topic: Experience about using screen readers. This category is made up by seven sub-categories, which contain very important and meaningful information about the phenomenon of the study. These pieces of information, which are considered as invariant constituents or units of analysis, went through a phenomenological reduction process. The seven ICs are the following:

Category #1: Experience about using screen readers

A. Inclusive education's evolution for visually impaired students

B. First English class' insights at university

C. VI students' language learning weaknesses

D. Assistive resources for VI students

E. Assistive technology used in English class: Screen Readers

F. Learning experience about how to use a screen reader

G. Activities using screen readers in English class and skills improvement

A. Inclusive education's evolution for visually impaired students

1) Technology advances
2) Past adaption difficulties
3) Government' work with visually impaired students
4) Poor good practices implementation

For ages, the educative system has faced radical changes in different environments, in this case inclusive education has evolved a lot lately. There are many factors that are involved in this evolution such as (1) technology advances, (2) past adaption difficulties, (3) the government's work visually impaired students, and (4) poor good practices' implementations. When it comes to evolving, the participants have mentioned that there is always a strong reason, and that is reaching a better life quality for everyone which means being more inclusive. For this reason, in the following paragraphs, these relevant topics will be explained with more detail.

First, the participants stated that one of the strongest reasons of why inclusive education has evolved a lot is the technological advances that have been growing up in favor of the educational growth of the society. According to the interviewees, the advance of TICS has let them explore other possibilities in the academic and work field. Besides, they mentioned that through this they were able to be part of the society's competition in the world.

This information is supported by the following participants' quotes:

According to Chris "I consider that the process of inclusive education is based on the advance of different TICS like screen readers, the use of computers, and technology in general.", besides he also mentioned that "For example these resources permit to explore other possibilities more than the last times"; "The technology is a very useful resource to study and explore". On the other hand, competition is a challenge that visually impaired students have

been taking placing in more and more, in this way Chris cited that “It is a big advantage because it permits to develop the competition around the world. With the technology I can do a lot of things, for example write an email, read interesting pages from psychology because I am a psychologist.” This shows that technology is gaining field academically and it is also improving the work competencies in a more inclusive environment.

Besides, Lucy also agrees with the advance of technology saying that Ecuadorian inclusive education “Si ha progresado en el caso de avances tecnológicos para ayudar a las personas con diferentes tipos de capacidades”. [Yes, it has progressed in terms of technological advances in order to help people with different abilities.] In this case, she refers to not only visual impaired people but also other people with special difficulties or impairments, which means that Ecuador is trying to be more inclusive.

In line with this, although Svensson (2006) highlights the importance of the traditional Braille books that were very laborious to create and design which lead visually impaired students to achieve their goals while learning. He also recognizes that there are other useful technological aids that can boost visually impaired students’ independence like screen readers as an effective way to help visually impaired student’s learning process. This author emphasizes that TICS are growing and are present everywhere as a big advantage for the neediest ones.

Second, another factor that made education be more inclusive is the past adaption difficulties that teachers had when teaching VI students. One participant mentioned that in the past he had difficulty in taking some exams because the teachers didn't have any adapted materials to help them. According to this Chris said that “when I was young I had to take my sufficiency exam and teachers didn't have the possibilities to adapt the material.” In fact, this has always been an obstacle to help VI students because there is not enough adequate material in mainly third world countries.

Based on this, author like Hornby (2015) acknowledge that inclusive education is a complex concept that encompasses the significance of diversity, human rights' concerns, social justice and impartially matters, along with a social socio-political model for disabled people. However, the term inclusion is not well-understood yet, due to the fact that underdeveloped countries do not have the necessary conditions to apply the implication that this concept carries. For instance, there should be adequate spaces and resources to develop a real inclusive educative program. When this author mentions the lack of necessary conditions, he refers to the materials' adaption difficulties which do not allow teachers to help VI students to progress and learn adequately.

Third, as the subject of study is being applied in Ecuador, one of the interviewees, mentioned that the government has tried to support inclusive education by creating spaces where people with special needs can grow and be part of the society. For example, Bladi stated that "the government works about these topics, for example now we have schools for visually impaired students". Referring to this he also cited that "..and we can be part of the high school system and the University education."

Along with this, the Ley Orgánica de Discapacidades, Asamblea Nacional República del Ecuador (2012), in the Article 28 about Inclusive Education, the constitution stablishes that:

> La autoridad educativa nacional implementará las medidas pertinentes, para promover la inclusión de estudiantes con necesidades educativas especiales que requieran apoyos técnico tecnológicos y humanos, tales como personal especializado, temporales o permanentes y/o adaptaciones curriculares y de accesibilidad física, comunicacional y espacios de aprendizaje, en un establecimiento de educación escolarizada. (p.11)

This law offers and stablish a proper implementation of inclusive program to help students' development in our society.

Then, the last factor is about the poor implementation of good practices in different social, academic and work fields. It is said that Ecuador is working hard on including every individual without any exception. However, education is still struggling with the lack of empathy of certain places where the good practices of inclusion have not been taken into account seriously, that is Lucy stated that "…en el Ecuador aún falta implementar más buenas prácticas sobre el trato y como enseñar en este caso a un no vidente." […in Ecuador, there is still a need to implement more good practices on how to teach and treat a visually impaired person.]

Generally, the findings that have presented previously are totally connected with the Ecuadorian reality because the education system is finally including special programs to help people with special need like VI students. Nevertheless, a system of good practices has not been applied properly, and adaption problems are still affecting the teaching and learning process. According to this, different authors mention the importance of the education's support in this area like Lowenfeld (1963) who states that Education should support the Visually Impaired (VI) people with a more real environment to nurture the self-confidence, and to deal with these real contexts in order for VI people to feel that they are accepted as independent individuals.

In conclusion, inclusive education's evolution has its roots in all of the difficulties that any country has had in the past. One of its main cornerstones is the technological advance (TICS) by which many devices have been developed to create a more inclusive environment. However, the governments still need to apply goo practices in education, therefore teachers and students can get advantage of a more productive teaching and learning process.

B. First English class' insights at university

1) Interaction and communication opening
2) Inclusive supporting material
3) Difficulties previous the first university English classes

Taking into account that educational inclusion must be a free right for every human being, it is essential to explore the experience that the participants had when they took their first English class at university. This can give us a more understandable idea about how the student felt when studying English in a superior level institution. The participants mentioned three main points that are related to the (1) interaction and communication opening in their first university English class, the (2) inclusive supporting material they used or had to learn to use, and the previous (3) difficulties they had before taking English classes at the university explaining how this affected in a certain way their initial development at the university.

Most of the participants mentioned that the first English class they had at the university was really good and easy to learn. They felt comfortable most of the time and they had the opportunity to interact with their partners and teachers. One of the vital things for them was the interaction they could develop in the class because they could practice the speaking skills in another language with their classmates which made them feel that they were learning

This information is supported by Chris saying that "I had the help of my teacher and acceptance of my friends.", he also mentioned "I had a chance to interact with my partners and to communicate better with the teacher.". Besides Bladi stated that "the process was much more accompanied by the university teachers who used to sit down next to me and help me with the activity in class."

In fact, there many authors that link the importance of the teacher role to help their students in their academic skills. And this is supported by Ramírez et al. (2017) when he mentions that the role of teachers in the inclusive special education is a key factor to turn a really difficult environment to learn into a more constructive one including different students' needs.

Exploring the participants' experience about their first English class at university, a meaningful topic about the inclusive supporting material came out. The participants highlighted

the significance of adapted material and one specific technological device “screen reader”. They considered these as their main tools of improving their language skills. For example, the adapted material they could use was the one that contained books or exercises transcribed appropriately to be used in the screen reader, therefore they could work at the pace as their partners without being the last ones to finish any activity in class. Besides, a screen reader is a great advance to help VI students accurately in their learning process. This tool let them get the information in a digital way to be produced in a spoken way for them to understand it, which lessen the time they use to do their common academic tasks. All of them agreed that through these tools and advances, they were able to practice more and explore the topics in class easily. They also acknowledged that despite the fact that some teachers had not worked with these tools in the past, they tried to learn how to use a screen reader to help them.

Along with this, Chris said “The first class was very good because I had resources and adapted materials.”. And, his following idea referring to the teachers’ experience about working with a screen reader was “She didn't know the system of the technological device I use. At the beginning she thought it was a terrible difficulty, but when the time went by [passed], she loved the system.” He also described the process that his teacher went through saying that “At first she used simple resources like reducing the text, for example reducing the readings into one or two paragraphs. But as time went by [passed], she learned and she let me explore more options.”

On the other hand, Bladi mentioned that “when I was in high school I could develop some useful methodologies to learn I also could manage the screen reader for studying English.”. In this way, he refers to his high school experience which helped him with a concrete background of using a screen reader before experimenting it at the university. That is why, he also alluded that “What I had to do here at the university was to adapt myself [me] to a different process because it was really new for me.”

Lucy also said that the first class was “mucho más sencilla porque ya había el lector, otro tipo de ayudas como audiolibros.” [very easy because the screen readers have already existed, other kinds of help like audiobooks.]. All of the participants were referring mainly to the use of a screen reader which had been helpful for their learning. Taking this into consideration, Llouquet (2017) highlights that this program “facilitates the electronic communication and basic browsing” (p. 6). The reason why the participants had access to these tools like screen readers is related to the creation of a space that aims to provide the most satisfactory aids for disabled people. According to this, the famous architect Ronald L. Mace, who created the Universal Design Theory (UD), and Center for Universal Design NCSU (n.d.) stated that this design gives the opportunity of creating environments for the different needs of people. In this sense, UD has been applied in different fields due to its connection with human rights in every branch.

Finally, the participants declared that they had some difficulties previous the first university English classes. They referred to three main issues which were adaptation limitations, writing adversities, and the lack of screen readers at high school. When they talked about adaptation problems, they attributed this to the lack of adequate materials to give them an easier way to learn. Then, they alluded that, when they entered to the university, the writing process was difficult because they did not have a proper training or learning technique about this. In addition, in their high school periods there were not enough assistive tools like screen readers to help them advance progressively in their language learning.

This whole information is supported by Chris when he says “…because in other situations the limitations were really big and there wasn't any correct adaptation so in the past we had to guess the topics to make them clear.”. Bladi added that “Even though I didn't have too much knowledge about writing, I tried hard.”. Besides he also commented “… in high school the whole system was using an oral methodology and my partners used to write for me.”.

this means that he had to be helped by others, otherwise he could not develop well his language skills in class. Besides he said that "…in the high school time we didn't have the chance to use a screen reader."

In accordance with this, Ainscow (2003) states that due to the different changes (curriculum, technological, and teaching and learning aspects, etc.) affecting the role of education, the traditional ways of teaching are no longer any more useful. This means that the difficulties the participants had in the past due to a traditional educative system affected their progress. However, thanks to the technology advance, they could face and overcome those problems easily and fast.

Despite the challenges, the findings showed that the participants' first English class was quite easy for them, and they were free to have a more participative environment than in their past class experiences. Thanks to a correct communication and adapted materials, they could reinforce their language skills as fast as their other classmates.

C. VI students' language learning weaknesses

1) Writing issues
2) Reading issues

When participants were asked what the most difficult part of learning a language was how, they mentioned that (1) writing and (2) reading were the most challenging skills. The findings showed due to the lack of training and adequate teaching strategies, the participants could not accomplish both skills efficiently.

First, the writing skill was mentioned several times due to the high level of difficulty they had to achieve their writing tasks in class. Now, why English writing is so hard, it is because it is not a completely phonic language, therefore, the words are not written as they are pronounced. In fact, a VI student can despair of writing due to the pronunciation of words. Even though, they can spare some extra hours practicing writing, they sometimes feel like giving it

up. Students face several challenges producing appropriate texts. At the beginning, it is usually an individual task usually as homework and therefore unsupported. That is why, in Ecuador, this skill is not well-developed, sometimes due to the big amount of teachers' work or the lack of strategies to teach this skill.

This is supported by the following direct quote from the data where Chris stated that "For me it was the writing because when I was a child or a teen I only wrote in Braille. The system was difficult because the teachers didn't know the system, for that reason I only write what I listen.". Likewise, he gave us an example "I listen to [listen] the words and I write. In my case I only write the word 'hotter' as /h o t e r/ using only one /t/". He also mentions that "…we're more accustomed to an oral culture so that is one of the limitations that this braille system has until now.". Besides, Chris made some suggestions about this issue like:

> I think that the teacher should also know braille and he or she should be more patient to read the whole material. If the material is for a screen reader or a material that is about the universal language in word format, it is important that the teacher check this material, so I kind of have the warranty and I can make sure that he is working well.

Another example he stated about his writing difficulty was:

> ...the first time I studied I lost superior writing level because I couldn't write, but now for me was so difficult to adapt to the process of transformation because when I arrived here, the University used screen readers, so I didn't know how to write. I had many difficulties in that topic.

Bladi agreed with the same issue by saying that:

> The most complicated part has always been writing, in the school I didn't have a correct learning process of almost any knowledge of English and then in the high school the learning process according to the writing topic was not good.

Lucy also said “El writing, porque no siempre hay quien te diga esto se escribe así.” [Writing because there was always no one who can tell you how to write in some way]. Therefore, all of the three participants agreed that writing was really challenging for them and not only in high school but also at the university.

Additionally, Krahnke and Krashen (1983), who developed the Language Acquisition Theory, considers that acquisition needs significant communication in the target language where speakers not always pay attention to the utterances’ forms but to the main message they are transmitting. This is the reason why visually impaired students learn more how to communicate in another language rather than writing, however, it is important for them to learn all of the skills without any excuse.

On the other hand, participants also pointed out that the reading skill was challenging, too. This is because there is not enough adapted material for them to practice reading. It is inferred that English is a language that has many inconsistencies and due to this, English can be a tough language to learn. Besides, it is vital to mention that this skill is connected with writing as well. If a person cannot read well, he or she cannot produce the language quite easy using correct vocabulary or well-structured written texts. Now, it needs to be considered that no matter the language, a VI student needs to develop learning basic skills first.

Bladi stated that “…if you cannot read you cannot write.”. He also complemented this idea by saying that “actually in Ecuador there are [is] a few kinds of materials in the country for learning English.” In this sense, Lucy said “El Reading por los libros que se encuentran en audio y los puede escuchar pero no todos.” [Reading because of the books that are in audio format and you can listen to them but not everything.]

These findings were supported by existing research as it was discovered that “Reading consists of many skills, including letter discrimination and use of meaningful vocabulary. For

many reasons, young braille readers often do not have adequate reading readiness skills in the early elementary years." (Miller, 2001)

To sum up, the participants found reading and writing really difficult learn due to the lack of adapted material and competent strategies to teach them these two important skills. They went through these difficulties in a time where the assistive technology was new, so they did not have enough time to take advantage of this progress. This means that Ecuadorian education needs to keep working to evolve its own teaching and learning system.

D. Assistive resources for VI students

1) Screen readers
2) Braille
3) Oral method

The participants highlighted three main resources for VI students: (1) screen readers, (2) braille, and (3) oral method. When they were asked about the resources the institutions offer them to support their learning process screen readers was the topics they mentioned the most. Generally, the three resources described above are highly important and each of them has a specific task and characteristic to support their learning process at their university.

First, the participants mentioned that the university offers them the access to screen readers, especially JAWS because the institution has hired a license from this program, so the students can get free access to the complete software. The findings showed that this particular program is one of the main tools VI students use in their classroom because the system is easier and friendlier than other programs.

Chris says that "I think the most important thing is the screen reader because I communicate better and I increment studying from the beginning mainly the writing skill".

Bladi also supported this idea mentioning that “What has now been chosen is the use of the computer with the program called JAWS that is a screen reader that allows us to read and write in English and to develop listening, too.”.

These results are related to what some authors say about the importance of using screen readers. For instance, it is worth to mention that a screen reader “facilitates the electronic communication and basic browsing” (Llouquet, 2017, p. 6). Besides, the Blind and Low Vision Group of the company Freedom Scientific (n.d.) states the different advantages of this software: “provides speech and Braille output for the most popular computer applications on your PC. You will be able to navigate the Internet, write a document, read an email and create presentations from your office, remote desktop, or from home.”.

The next, resource was Braille which is the most traditional method used in their classrooms and in their daily routines. Despite the fact that this method is being replaced by the new upcoming technology, it is still used by VI people. In fact, the university offers this resource because there are still students who reject the use of screen readers because they are used to it. Instead, they prefer to use braille. On the other hand, the participants also complained about the different disadvantages that this service has had for example, the big amount of information that must be transcribed and the lack of devices to do it.

That is why Chris mentioned “Braille is really difficult to translate, one book in braille for example is 100 or 200 pages.”. Then Bladi pointed out that “Braille has been neglected because there isn't enough adapted material.”. Finally, Lucy agreed with this issue saying that “Casi en braille no use mucho más que mis propios apuntes.” [I didn’t use Braille too much, instead, I used my own notes.]

This information is supported on a previous existing research where Svensson (2006) highlights the importance of the traditional Braille books that were very laborious to create and design but they were an important tool to lead visually impaired students to achieve their goals

while learning. He also recognizes that there are other useful technological aids that can boost visually impaired students' independence like screen readers as an effective way to help visually impaired student's learning process.

Finally, the last resource was the "oral method" (VI students call it that way because it refers to the oral instructions given in class) which is simply a spoken strategy and it is based on dictation. Here, the teacher speaks and explains a VI student the content of the class by giving details of every item studied from the book or his or her notes. This is a common method that has facilitated in a certain way the teaching and learning process. Conversely, this has not been the most successful resource in a class because the students are limited only to listen and speaking, the reading and writing skills are set aside.

In this sense, Chris highlighted that "And the oral method is obviously what people really like to use when they are interested in speaking English but they don't focus on writing or the academic field."

All in all, there have traditional and new method that must be used in classroom to help a VI student because we need to adapt the learning environment according to their needs. Teachers cannot only use one method or strategies commonly used for sighted student. In fact, a teacher must find the correct way to teach VI student in a class where he or she is surrounded by other sighted students. It can be a challenge, that is why new technological advances are being produced like screen readers to make education easier and more dynamic.

E. Assistive technology used in English class: Screen Readers

1) JAWS
2) NVDA

The findings showed that the most common assistive technology that participants use in class are (1) JAWS and (2) NVDA screen readers. These screen readers were designed to

facilitate the communication and use of external material for VI people. Participants indicated that these tools have brought them stability and comfort in their lives.

JAWS was the most mentioned screen reader in all interviews due to its ease of handling. Participants said that the university had hired a license, therefore it was easier for them to use it. Besides, all their training classes were about how use this program. Thus, they almost master this tool including all of the command they need to apply within this software. This program is adapted to be used in a computer that has Windows software. JAWS allows people to have wider accessibility of web content and Windows applications. Some of the basic functions of a screen reader is to read the content on the page and navigate through the computer.

Chris stated that "I use JAWS which is the best because it is complete", when referred to the word "complete", he meant that all of the command are adaptable and easy to use. In addition, Bladi said "In this case JAWS is a very important software not only for reading in English but also for writing and developing abilities, for example the listening and also the speaking."

Existing studies agreed with these findings as it was said that using assistive technologies are very helpful for VI students and other people with any kind of disability; however, there have not been changes yet (Zhou et al., 2012).

On the other hand, another program was mentioned which is NVDA. This software has almost the same functions as JAWS. Its aim is to allow VI people to interact with Windows programs and websites as well. The participants said that they used it on a smaller scale because JAWS was more complete than this. The reason is that the students are used to JAWS from the beginning rather than using NVDA. the use they give most to this program is to identify certain applications in their computers.

According to this, Chris said "…another free program is NVDA, but I use it just a little because this program needs to install other complements.". besides, Bladi also remarked "I also use NVDA. It's really important to learn not only for English language but also for other languages. It would be interesting that This technology can be developed for the other languages learning something that has the Latin alphabet."

Further research is linked to this topic as NV Access (n.d.) states that this program "allows blind and vision impaired people to access and interact with the Windows operating system and many third party applications.". In addition, Hayhoe (2014) points out that "there are more radical Transformations of syllabi through assistive technologies. For example, software and hardware has Redefined how students are taught to read and produce writing..." (p.10). In conclusion, these new programs let teachers and VI student get rid of useless tradition techniques by the new contemporary ones like screen readers.

F. Learning experience about how to use a screen reader

The evolution of technology and the fast growth of internet has been a great opportunity for visually impaired people provided that interactive environment and learning management systems like screen readers are designed to increase the quality of education. In this sense, the interaction of the VI student with a screen reader has been a long process of years of training. The findings showed that the participants needed the help of some training to use a screen reader.

Frist, to learn how to use something is not easy at the beginning, but it always has an initial process like joining in a training course or asking for professional help. In fact, all of the participants took a training course about working with screen readers; this took some years of practicing, and they still keep learning more and more. This initial process is basically based on learning the main commands and system of a screen reader which in this case was JAWS.

The participants had the time to investigate the advantages and uses of this screen reader as well.

There are many reasons why VI people decide to set aside Braille and start using screen readers. For instance, Chris mentioned that "As my grandmother lost her sight, I needed to look for other resources to help me. And this was the moment when I decided to go to ESPE university to have a training session based on screen readers.". Furthermore, he stated "…when I finished [finish] high school, I needed to use more resources, and I loved psychology. In this career you needed to read a lot."

In fact, he also described that this was not an easy step, and this is supported by this following quote where Chris said "At the beginning it was difficult because we only scanned the text and we handed it in that way.". This means that the initial process was longer and complicated because at the beginning the material was not well-adapted. Besides, he also said "I used to ask to the trainers at the beginning,". He also highlighted that the help of professionals was really useful for him because VI people are normally used to other people's help, in this case their trainers played an essential role. In addition, Bladi said:

> I learned to use screen reader when I studied in high school because I needed to use screen readers because I had to do my homework to write with my partners, work with social networks for example Facebook. After that I had to take a training course for learning how to use screen readers like 1 year. I had to learn windows program, word, excel, internet and how to send emails using screen readers.

In this sense, the participants also mentioned the different topics they had to investigate and learn about screen readers. That is why, Chris said "This was the time when I had to investigate a lot about different resources for example transform readers, pages in HTML format, Programming pages and doing radio using screen readers for streaming.".

Even though, the handling of a screen reader was quite easy, the participants brought out some problems, too. Chris indicated that "… the problem was the [manage] of the text. For example, I couldn't remember well the letters as in writing, I didn't understand some abbreviations such as [for example] P.V. which referred to PHRASAL VERBS, and I had to ask to the teacher." Likewise, he also commented that:

> Another difficulty was the navigation through the [around] text, for example, when the teacher asked to go to page 16, it was difficult because the document was not too well organized, but when I continued the process, I suggested the teacher to include hyperlinks into the text. If I didn't have that, I had to use special commands from the screen reader program but it was difficult to set up those commands.

Moreover, Bladi cited that:

> In the past [Before] I only used it in Spanish when I studied at high School, and here at the university it was the first time I used it in English. I had to learn how to write in English because at [in] high school most of the time I wrote in Braille or I used the oral method. In that time, it was difficult for me to write and to read in English.

And finally, Lucy stated that "Recibí un curso, luego fui perfeccionándolo con la práctica y se convirtió en una herramienta fundamental para mis estudios." [I took a course, then I kept on mastering it with practice, and it became a very useful tool for my studies.]

With this in mind, there have some Ecuadorian researches that have highlighted the importance of training, for instance, Tocto (2013), who carried out a research about screen reader in the Zamora province, recommended that training is the only way in which teachers, students and even authorities can be updated about the latest technology changes, they will see how this will improve the quality of education.

Lastly, the findings pointed out that training was important in order for VI students to develop their skills in different environments. The participants could work and investigate more about new technological systems to improve their academic knowledge.

G. Activities using screen readers in English class and skills improvement

1) Useful activities
2) Useless activities

The results revealed that the screen readers let the participants develop many (1) useful and (2) useless activities in English class. Despite the fact that they have used a screen reader before, they highlighted that it was their first time working with a screen reader in English at the university. In this sense, they had the opportunity to practice through many different comprehensive exercises in order to improve their skills related to English as a foreign language.

The participants alluded that the most common activities were based on multiple choice exercises, filling the gaps, songs exercises, true false exercises, etc. in order to expand their vocabulary and grammar in English. Additionally, they also classified them into useful or useless activities according to their personal experience. Below is shown the different activities divided into skills that the participants talked about:

Table 6
Activities using screen readers in English class

	Skills	Activities
Useful activities:	Listening	• gapped lyrics • multiple choice tasks • pronunciation videos
	Reading	• gapped texts • matching tasks • multiple choice tasks • true – false tasks
	Writing	• conjugating verbs • writing simple sentences • correcting mistakes

Useless activities:	Listening	Advance level: • gapped paraphrased text
	Reading	All levels: • exercises with tables or pictures

Activities like choosing the right option, matching or true-false tasks let the participants be more precise in terms of discarding the wrong options or focusing on important details from a listening or reading exercise. These activities have the aim of practicing with distractors, therefore students can learn how to identify a visible correct answer fast. VI students felt more comfortable if they had an exercise that offered them different options to choose. In fact, most of the participants' answers were based on how good they worked with these type of task because this improved their reading and listening comprehension. Besides, other exercises like gapped lyrics or pronunciation videos helped the participants to improve pronunciation as well as their spelling. Related to this, Lucy commented that "La mayor utilidad en la clase de inglés fue en el tema de los videos para poder escuchar la pronunciación y la lista de palabras." [The most useful thing in the English class was using videos to be able to listen to the pronunciation and a list of words]. In addition, Chris also argued that:

> In the listening I could complete it for the first time when I use it here at the university because at high school everything was with the oral method, so here at the university it was the first time I could complete a listening exercise using screen readers. I could complete gaps and multiple-choice exercises in order to do test homework independently.

Furthermore, in terms of writing most of the participants outlined that thorough using screen readers, they could develop more writing exercises to improve this skill that they they had not practiced previously. Conjugating verbs, writing simple sentences, and correcting mistakes were examples from their experience. In this way, they could correct their spelling mistakes and write more complex structures using appropriate grammar and vocabulary in

context. Along with this, Chris explained the following "… by completing sentences I have learned more grammar and vocabulary in context.". Besides, Bladi highlighted that "The most useful activities were to write in English, to complete the listening and the multiple-choice exercises. However I think that it is important to read documents too or write essays."

On the other hand, they also talked about gapped exercises, but they did have problems to develop these tasks because of the level of difficulty. The participants mentioned that they started working with gapped paraphrased texts in the listening skill when they were in the advance levels. The content of those levels was about FCE preparation, and it is there that they realized they could not accomplish the task very well. Even though, they have done similar exercises in the previous level, this was kind of new for them. The following quote supports the previous information, Chris said:

> When I studied the advanced courses I reviewed some FCE exercises and I didn't understand what [was] the useful part of the exercise was where you need to complete the gaps with one correct word. I think that it is very difficult for blind people because after you listen to the whole audio, it is difficult to remember, and then you have the text with gaps that doesn't say the same words as the listening, so everything is paraphrased, and it is really hard to understand that listening while the screen reader is reading the text because that is the main goal of the task to listen and complete at the same time, but we cannot do it.

In this case, he explained that the problem was listening to two different audios at the same, because as we know the screen reader reproduce the printed document by voice. But, the student had to listen to the exercises too, which took him extra time to accomplish it. That is why Chris said " For example, I normally listen to the audio then I stop it and then I listen to the text and complete, So I used to take like two or three hours just to do this exercise while my partner's used to take maybe 15 or 10 minutes. So for me it was A waste of time."

Another issue they mentioned was the excessive use of graphics, pictures or tables in their English exercises that a screen reader cannot analyze well. Actually, the whole content should have written description for them to read easily, and there is some important research that confirms this focusing in the Universal Design principles, too. That is why, some essential steps for curriculum developers and teachers were mentioned by researchers specialized in Universal Design. In general, Orkwis and McLane (1998) summarize these steps in their article saying that providing digital texts formats, audio captions, relevant descriptions for graphics, and essential descriptions for video are vital to make a VI learner feel part of the educative environment.

These professionals highly recommended that every material to be used with a screen reader, should have written descriptions and captions for the audio material, too. In this sense, it is vital that everything that a teacher gives to their VI students, must be well-adapted depending on their needs. For this reason, Chris complained about this saying that:

> Another inconvenient is the tables and pictures that are presented in the document, and that don't have any written description, so we know that the screen reader reads words and the problem is that the pictures don't have words: they are images, so when someone gives us any material, they need to make sure to have everything described by words.

Lucy also argued that “Lastimosamente muchas páginas son gráficas y el lector no permite gráficos y se dificulta un poco acceder a esos ejercicios.” [Unfortunately, many pages are graphic and the reader does not allow to read graphics, and it is difficult to access these exercises.]

As a matter of fact, all of the participants have agreed that these activities through screen readers have improved their listening, reading, and mainly writing skills. Conversely, they did not talk about speaking too much because it was obvious for them that the first skill they develop very well is actually speaking. Therefore, the Language Acquisition Theory where Krahnke and

Krashen (1983) considers that acquisition needs significant communication in the target language where speakers not always pay attention to the utterances' forms but to the main message they are transmitting. This is the reason why visually impaired students learn more how to communicate in another language rather than writing. According to this, using a screen reader was helpful to practice the other language skills that became their weaknesses in the past. The participants pointed out that writing improvements were higher, and they could overcome the fear of producing written material.

In this case, Bladi stated that "…by having the independence of the screen reader, one necessarily makes the writing better because there is no longer a person who writes for you, but you already force yourself to know how to write something.". To this Lucy argued that "Estoy tratando de perfeccionar la escritura, el lector le permite leer como una palabra se escribe en sí, eso a uno le ayuda a saber cómo se escribe bien." [I'm trying to master the writing. The screen reader allows you to read how a word is written itself, and that helps you know how to write well.]

This is supported by Gerber (2003), an anthropologist who worked as the Senior Research Associate for the American Foundation for the Blind (AFB) in New York, that says "Writing is essential to success in modern life. However, it carries an added weight for this population, since people who do not have access to print find it more difficult to attain literacy skills" (p. 543). When she mentions "this population", she refers to VI people, and she remarks on the importance of learning writing skills to succeed in life.

In conclusion, the most essential thing to emphasize is that languages do not necessarily need to be visual, and this is something we should apply in our curriculum plans in order to ensure accessibility to VI students in their classrooms. Since adapting material is really useful, we need to make sure to review as many times as we can before handing them in to our students. Finally, we have to test previously every strategy or exercise to be applied in the class to see if

it works, and of course we need to improve it each time, as a result, VI students can adapt themselves to a foreign language environment easily.

Research Question #1

How do students define their perceptions about using screen readers in English class?

Beliefs

The data studied related to this research question about perceptions derived from the questions 10, 11 and 12 on the interview protocol. The insights of the participants were coded primarily on similarities and essential facts from their experiences. The responses of the participants to the perceptions regarding research question # 1 were organized under the following topic: Students' perceptions about using screen readers. This category is made up by three sub-categories, which contain very important and meaningful information about the phenomenon of the study. These pieces of information, which are considered as invariant constituents or meaning units, went through a phenomenological reduction process. The three ICs are the following:

Category #2: Students' perceptions about using screen readers and their teachers' reaction

A. Students' perception on using screen readers' in EFL classes

B. Teachers' preparation to teach English to a VI student

C. Teachers' reaction about using screen readers in class while they teach.

A. Students' perception on using screen readers' in EFL classes

All the participants had a good perception about the use of screen readers in their EFL classes. The participants were insistent in their affirmation about the great benefits of using a screen reader to learn another language. For instance, Chris stated that:

> I had the possibility to improve the writing section and the communication. It is not necessary that the teacher knows how to work with braille. I could develop a lot of

projects in the competitive world [competence]. For example have a good job, study a master of an international career, etc.

He referred to his academic and job fields where he has grown a lot since the existence of the screen readers. He also mentioned something which is really interesting about Braille. Regarding to this, it is worth to say that with the upcoming technological advances, a VI student can be more independent and their teachers will have the accessibility to learn how to use this devices. Even though, braille has been the main tool of communication of a VI person, it also has been really hard to handle it and get adapted material for it. Otherwise, a screen reader is faster and can deal with lots of material to offer comfortable benefits to a VI student to succeed.

That is why, digital accessibility is absolutely significant for VI people's personal development. Ableser and Moore (2018) cited that Digital Accessibility:

> …focuses on learners who have particular needs related to sensory, physical, and/or cognitive impairments. This often involves coupling content presentations with accommodations to make them accessible to all users—for example, providing text versions of image-based content, which allows a screen reader to interpret that content for students with visual impairments.

In this case, Digital Accessibility is the concept that covers all the advance in education through technology. For instance, screen readers which belong to this evolution offering an adaptable environment where VI students can enhance their cognitive and language skills efficiently.

Chris reflected on his own answer about screen readers' use, and stablished that "They seem to be very dynamic, important and fast because it is an easier way to navigate. There are certain limitations, for example, in listening, perhaps the confusion in the graphics, but with practice it will gradually improve."

Bladi talked about screen readers' use in terms of a cornerstone in his life: "It has allowed me to develop all the English language skills because in the end screen readers are like the eyes of the person with visual impairment." Then gave more details about this interesting perception saying that:

> The eyes because I can know what is written on the digital material or web pages. In the case of Reading, it lets you know how to spell a word if one reads letter by letter. In the case of writing, it helps you because we can write through the computer, communicate in English, write an article. All these skills also help to develop speaking because everything goes hand in hand.

To what Lucy also added "Ha sido muy positivo usar estos lectores de pantalla, me ha facilitado mucho el conocimiento sobre todo de otro idioma." [Using these screen readers has been very positive because getting knowledge of another language has made it much easier for me.]

Overall, using screen readers in an EFL class have benefited VI students in great ways that we could not imagine if we did not experience with in class. Referring back to what the participants said, I can infer that this tool has become indispensable in their learning process. According to my experience working with VI students, I can say that a screen reader is very manageable and flexible to learn. Considering all of this, teachers should offer inclusive environments and tools that remain open to the students' requests, in this way they will know that a language is a like an portal with many aspects to know. Therefore, as professionals of education, we need to make sure the gates of accessibility remain unlocked for them.

B. Teachers' preparation to teach English to a VI student

First and foremost, teachers need to understand that it is not impossible to teach a VI student. What they really should know is that preparation and will are important facts to do a good job within their classes. The findings revealed that the participants perceived a lack of

training of their teachers. However, they have stated that most of the educators have the will to learn about VI people's learning process.

Chris referred to this issue saying that:

> In this moment I think that teachers are prepared; however, this system is new and the teachers need more training about this program and tiflo technology. Besides, the teachers have will [voluntary] to learn. They should get trained in how to use [manage use of] screen readers, the scopes of the screen reader, for example when the screen reader reads a lot of information the teacher omits to eliminate tables or images.

Bladi reported that every level they had new teacher who they had to start the process with again: "Training is necessary because sometimes new teachers come. It would be necessary for them to have knowledge of how they can teach blind people."

Lucy also stated that "A la sociedad le falta aprender a ser inclusivo. Y ser inclusivo no es solamente aceptarlo en un aula de clase, sino también tener los recursos necesarios para sentirse parte de esa aula de clase." [Society lacks learning how to be inclusive. And being inclusive is not only accepting one in a classroom, but also having enough resources to make us feel part of that classroom.]

When the participants talked about training, they affirmed that there are not enough didactic materials for them. That is why Lucy mentioned 'enough resources' referring to adapted content where they can practice without limitations.

Chris emphasized that "There should be training in the area of a screen reader management, in the area of commands management, and how the material should be adapted to the student, it is a kind of teachers' tracing program that should exist."

He also announced that there are many aspects that teachers overlook without intention, and this is due to the fact that they are well-prepared to work with a screen reader in class:

> For example, the teacher knows that adaptations work, but he does not know that there are adaptations for some applications that are used in class such as Kahoot, Hot Potato; applications that are excessively graphic, so that type of training in virtual environments is the most important for the teacher in order to know what material can be given to [to give] the student.

Bladi also talked about the importance of assistive material:

> The same class for sighted student can taught by using assistive [assisted] material. We develop the same activities of the book, but through digitized material. Thanks to the use of the computer, teachers also take into account that we can follow the same as other classmates, we can read the text as the teacher explains or we can fill in the same digital material either [also] multiple responses, etc.

It can be said that teachers are surrounded by many pedagogical and technological material. The point is to prepare themselves to know how to use those materials in class, and take advantage of all their educational benefits. However, when Lucy referred to this topic, she felt really discouraged saying that "Uno se siente fuera de, me refiero a diapositivas, temas visuales, cosas graficas que nosotros no podemos visualizar, no nos ayudan. Los profesores deberían tener la apertura de ser más descriptivos." [One feels like a fish out of the water, I mean slides, visual themes, graphic things that we cannot visualize do not help us. Teachers should be open to being more descriptive.]. This leads us to question ourselves whether as education professionals, we are really working for the welfare of our students.

There have been many studies which suggest that there should be training programs for teachers who work with VI students. For instance, Abner and Lahm (2002) stated that the absence of support and interest from the authorities avoids teachers and students have access to a better training process about using assistive technology like screen readers. In the literature review, it is repeatedly remarked on the advance of technology and its advantages in education

whose aim is to progress in any field, for this reason, it is needed that training programs or text books with instructions about screen readers' use must be developed and included in every institution to have the opportunity to enhance the life style of every citizenship (Zhou et al., 2012).

Overall, it may be said that teachers are in charge of nurturing and encouraging their students to develop their natural skill. All of the participants perceptions focused on the lack of training, therefore it is time to take action in order to improve our own professional standards.

C. Teachers' reaction about using screen readers in class while they teach.

The first of class is always unpredictable, teachers do not know who they will teach to, and their students feel anxious about how the class will be. Most sighted people assume that visually impaired people need a lot of help and it is hard to work with them. The findings showed that this is the common reaction teachers have when they first meet a VI student in class. In fact, it is understandable since most teachers usually have no experience working with VI people.

Most of the participants expressed that their teachers felt really scared a d anxious because they did not know how to work with them and how screen readers work. In this case, Chris described this situation as a feedback process "At first they feel fear and are a little bit lost, but then they mate[fix] themselves and learn with oneself. And then they start adapting the material, they are became our guides. It is a feedback process."

Bladi also pointed that his teacher had many questions and showed interest to help him:

> When I took the first time class at the university the teacher was shocked, because He never knew how I used this screen reader if I couldn't see. He felt curious. He had some questions for me for example how I use my computer, how I read the documents or the text, and the common question was how he or could teach me. So I answered that I take the same class as the others.

However, not everything is rosy and Lucy commented about the negative experience she had when she started studying English using screen readers at university:

> Fue una reacción de sorpresa porque no tuvo la oportunidad de dictar clase a un no vidente y tampoco conocía el uso de un lector de pantalla. Lo que si me advertía era que debía usar audífonos para no interrumpir a los demás compañeros mientras yo tomaba apuntes. No recibí ayuda de parte de ella, sino de mis compañeros quienes me dictaban la clase. No tuve el apoyo ni la paciencia que yo me esperaba. [It was a surprising reaction because she did not have the opportunity to teach a visually impaired person and she did not know how to use a screen reader. What she did warn me about was to wear headphones so as not to interrupt the other classmates while I was taking notes. I had neither the support nor the patience that I expected.]

This is a clear evidence that shows that not all of the teachers are prepared to teach a VI student, and worse if they are not interested in helping their students. Therefore, these perceptions represent both sides of the coin, one positive but one negative. That is why, many laws have been created in Ecuador in favor of the most needy ones. For instance, in accordance with Ley Orgánica de Discapacidades Asamblea Nacional República del Ecuador (2012) stablishes that the Ecuadorian authority will implement the necessary processes to promote inclusion in our educative system offering the required support to make this real in each classroom.

Thanks to this, many institutions have implemented special programs for students with different disabilities. Besides, these laws have been trying to encourage inclusion in different educative and social fields where, in this case VI student, can grow professionally. There is a clear example of this, where Bladi expresses his advance and good work with his teacher: “My teacher and I could develop some methodology to Continue learning English normally. And

then in the rest of the classes and levels I could talk to the teachers and show them the best way to teach me."

By and large a VI student is a student first, therefore teachers must recognize correct strategies and adapt the environment for them. In fact, they can be capable of adapt themselves to any environment they face. after all, they having experienced ups and downs that allowed them to learn the meaning of adaptation. In this sense, teacher should not have fear of asking and training to accomplish a good work with their VI students.

Research Question #3

What are the main benefits of using screen readers in English class?

Beliefs

The data studied related to this research question about perceptions derived from the questions 13, 14, 15and 16 on the interview protocol. The insights of the participants were coded primarily on similarities and essential facts from their experiences. The responses of the participants to the insights regarding research question # 2 were organized under the following topic: Screen readers' benefits. This category is made up by two sub-categories, which contain very important and meaningful information about the phenomenon of the study. These pieces of information, which are considered as invariant constituents or meaning units, went through a phenomenological reduction process. The two ICs are the following:

Category #3: Screen readers' benefits and expectations

A. *Benefits of using screen readers*
B. *Visually impaired students' ongoing learning progress in their EFL process*
C. *VI learners' expectations about screen readers and their English teachers*

A. Benefits of using screen readers

1) Web accessibility
2) Language skills development

3) Autonomy

After considering all of the experiences and perceptions about the use of screen readers, the participants affirmed that the benefits are many, and the finding focused on three main aspects improvements: (1) web accessibility, (2) language skills development, and (3) autonomy. These aspects played an important role in the participants' class development.

First, the results highlighted that through using screen readers, the participants could access to the web easily. They could manage web content like social networking sites, emails, informative web pages, etc. When talking about web accessibility, the participants commented that this was a door to learn more not only about English but also about other subject, this means that this topic was entirely related to their e-learning process. This confirms what the Kelly, Phipps, and Swift (2004) said about accessibility and e-learning:

> At the heart of any e-learning experience is the pedagogy that drives it, the learning outcomes, the content, which illustrates those learning outcomes, the context in which the content is presented and the activities a student completes to aid his/her understanding of the learning outcomes (p.7)

Besides, Chris also added that "First, it allows me to interact on the internet, search for material on the internet, material adapted to my conditions. Secondly, it offers me the possibility of communicating and managing social networks and most importantly access to reading."

Second, improving language skills were also one of the benefits of using screen reader. The reasons are many and the participants compared their old learning techniques with the new one (the screen reader), and the results showed that the time of doing the tasks, the amount of material, and the upcoming variety of applications were satisfactory factors to improve their language skills. Hence, this process has improved the quality of education as well as the language teaching practices inside the classroom. In this sense, it can be said that there is a strong relationship between web accessibility and teaching and learning process which will be

always beneficial for a VI student. This supports what Seale and Cooper (2010) said about this relationship: “if pedagogy and accessibility are integral to one another then a teacher must have some responsibility for and understanding of accessibility.” (p.1110)

Regarding this, Chris said “This could solve the gap that exists in not being able to develop the writing skills in English. I think international English certifications were very limited, too.”. Talking about the accessibility, he also exemplifies the following:

> So that the texts are well-adapted for me, they should be in Braille, but when using the screen reader I can read any text transforming it either in PDF or in Word or using some additional application, so it seems to me the most effective tool that can help me.

To give a stronger support, Chris also gave another example about another language he and his friend learned in the past:

> I had a problem in French, they didn't give me the correct certificate, because they said I didn't know how to write in French. So now with the screen readers, there was already a case of a student who could finish her levels in French by writing with a computer and with a screen reader. There was no adaptation, but the girl did it anyway despite not having her international certification.

Finally, the autonomy was the main advantage for them because they said that in the past they were always accompanied by another person to develop their daily activities. for this reason, the findings demonstrated that through using a screen reader, a VI person can be more independent. The following quote shows an example that Bladi endorsed:

> Beyond all the skills, it helped me to be more independent, I can no longer depend [in my case] on a person who reads for me in English, or someone who writes [writing] for me. I could say that I have 80% independence within class and 20% of everyday life.

Lucy said something similar, supporting the importance of autonomy by using a screen reader:

> Con el lector puedo digitalizar un libro, leerlo, instruirme, aprender cosas nuevas sin esperar que alguien le lea. Le da mucha más independencia. La autonomía es importante, se administra el tiempo que uno tenga o la manera que una quiera hacer las cosas. Si no entiendo algo, lo puedo volver a repetir o revisar, sin ningún tipo de problema, si le digo a alguien que me vuelva a leer, de pronto se enoja. [With the screen reader I can digitize a book, read it, educate myself, learn new things without waiting for someone else to read it for me. It gives you much more independence. Autonomy is important, the time one has or the way one wants to do things are managed by oneself.]

This is supported by the following research from De Freitas Alves, Monteiro, Rabello, Gasparetto, and De Carvalho (2009) that says "Information technology allows individuals with visual impairment to overcome a major part of the difficulties in daily life and offers them independence and autonomy concerning information management and access to communication, just like their peers with normal vision" (p.149)

With this in mind, it can be concluded that the benefits are powerful, and thanks to this VI students can overcome their difficulties and master any language they can learn.

B. Visually impaired students' ongoing learning progress in their EFL process

Education is the cornerstone of every human development in the society. Having a competent learning process can lead students to improve their ability to understand and lead in a world where there is still a certain level of exclusion and where the inclusion is still being worked on. In this sense, the findings demonstrated that the progress that the participants have had during their whole EFL process has been successful and that there is the need of improving and researching more about the quality of VI students' education.

All of the participants agreed that this was a prosperous progress. According to Chris:

> I think the learning another language is difficult for blind students, but through using the screen readers we can eliminate this difficulty. However, the process isn't finished

> because we need to continue looking for more facilities for students, for example accessible web platforms, and I think that the progress has been good and I need to investigate more because the teachers here give us the possibility to keep working. I think that I have progressed since the first time here at the university because it has had the possibility to update the investigation about blind students' learning in the tiflo library that is supported by our teachers and authorities.

Bladi also considered that this progress was determinant to work on class methodologies: "We should improve methodologies for screen readers. The progress has been good since the moment my teacher and I could develop a more inclusive method to teach me. I really feel comfortable. "

Meanwhile, Lucy said "Ha sido difícil y a la vez placentero pero siempre con las ganas de aprender más cada día y con la ayuda de los lectores de pantalla he podido progresar más rápido." [It has been difficult and at the same time pleasant, but always with the desire to learn more every day, and with the help of screen readers I have been able to progress faster.]

All of these thoughts reflect the improvement of educative quality in terms of inclusion. This has let VI students acquire bot only academic skills but also life skills relevant for their personal growth. And this can be only achieved by the support provided by competent professionals and a good inclusive EFL environment. In this way, they have overcome the barriers reflected in the attitudes of the society round them. All of the participants mentioned the role of the teacher as key point of their improvement, which is reasonable because there cannot be a teaching learning process without its main actors. Thus, these results support what Ramírez et al. (2017) discusses about the role of teachers in the inclusive special education as key agents to turn a really difficult environment to learn into a constructive one including different students' needs.

All in all, there is a powerful call for action to further enhance this field by offering a high-quality program where VI student can keep progressing better, so that teachers can strengthen their practices in the educational field by stimulating good attitudes towards a person with visual impairments.

C. VI learners' expectations about screen readers and their English teachers

1) upcoming improvements of screen readers to learn English
2) teachers' readiness and willingness to help VI students to learn efficiently another language

When the participants were asked about their expectations they focused on two important aspects about (1) upcoming improvements of screen readers to learn English and (2) teachers' readiness and willingness to help VI students to learn efficiently another language. These aspect connected with the whole previous answers they have been giving about the experience and importance of using screen readers to learn English.

First, they talked about what improvements they would like to see in the upcoming advances of screen readers. For example, more accessibility to every web page, more hyperlinks, a more logical way to navigate by the documents, pronunciation of different words and reading pictures. This a complete list of things that a screen reader program needs to improve. As, this comes from the whole experiences the participants had, it is natural that they worry about these element and their future improvement.

Precisely, Chris hopes that:

> … the level of accessibility of navigation is increased, that more accesses are created as hyperlinks, some connections to certain texts, that the logical form of navigation in the tables must be facilitated and that a mastering process is gradually taking place from the beginning. When the student begins [enters] to develop skills, they reach the upper

levels, so the student already knows how to quickly handle this. I believe that this can be achieved skillfully.

Bladi also expressed his desire saying that:

I expect that screen graders can read pictures. This is because they only read text in the picture. In terms of recognizing the words I think that the screen reader needs to read better because there [that] are sometimes that it is kind of difficult to understand what this device is saying.

Finally, Lucy argued that "Que pueda leer un gráfico que dentro tenga escrito letras, textos, lo que el lector aun no lo puede hacer." [That it can read a graph that has letters, texts written on it, which actually the screen reader cannot do it, yet.]

Regarding this, it is necessary to mention that not everything is perfect, and when a device like this turns out to be the main support for a VI person, this needs to change as often as necessary according the person's needs. That is why, it is essential take into account the expectations that the participants have because they come from their reflection from their own experiences. Besides, Leporini and Paternó (2004) point out that "When interacting with a screen reader, the way in which the information is set out on the page is very important, because what the blind user hears is very different from what sighted users would read from the screen."(p.1). That is to say, every material that is used in class should be very well-designed and manageable to give to the student.

Then, the students also discussed about their teachers' readiness and willingness to help them to learn efficiently another language, which is vital in their learning process. A teacher is the cornerstone of this educative process, therefore he or she needs to participate actively by giving prompt and efficient solutions. In this sense, Chris stated that "I think that the institution is prepared, I think that teachers are human enough to understand that this is a skills learning

process.". However, he expects that the institution is more organized by implementing more inclusive spaces:

> I think that it is simply a matter of organization and of course the language institute needs to increase these spaces in agreement with the entities that have worked, in this case the tiflo library. We can work in a partnership process so that [for] the adaptation can be strengthened and obviously teachers also need to have a certain degree of skills training so that they can be clear about using screen readers.

He also admitted that the changes do not depend on the institution but on their own teachers' desire:

> Of course it depends on the teacher and his predisposition, I have had teachers who have been very apathetic, they have not taken the adaptation seriously, but instead there are teachers who are interested and are every day asking if it is ok , if I feel good, they ask me if [about] I think something was good or I can let them know to change it. And that is good because these teachers are gradually making the situation complex, increasing the level [degree] of difficulty.

Bladi also agreed saying that:

> Just as there are teachers who are willing to teach a person with disabilities, there are teachers who do not have it. Because they consider that it is difficult to teach blind people. Mainly because they need to prepare the material for the class and it is a tiring job for them.

In this sense, he considered that emphasizing that it is not a big deal to work with visually impaired students, teacher feel less stressed and be more committed to teach them:

> It should be encouraged [encouraging] that teaching a person with a disability is not a big issue because in the end there is already technology and it can be used hand in hand, but it must also depend on the will of the person with visual impairment.

He also explained that training is important:

> The challenge of training on how a reader works must be assumed by teachers because for many people the issue of screen readers and blind students is unknown, it is a matter of inclusion, integration and awareness. Actually, teachers must learn to get along [good] in a friendly way with technology.

Then, Lucy mentioned that:

> Que tengan la apertura para aprender, que no se cierren a solamente lo que tradicionalmente se da o se ve en clase. Que tenga la disponibilidad de aprender algo diferente, que realmente no es difícil cuando hay buena voluntad y buen corazón, las cosas se pueden lograr. [That teachers should be open to learn; that they do not get stick to only what is traditionally given or seen in class. That they have the availability to learn something different; which is not really difficult when there is good will and a good heart, things can be achieved.]

She described this help as a very profound feeling for her: “No sabe lo grato que es cuando un maestro a uno le ayuda a subir un peldaño más.” [You don't know how pleasant it is when a teacher helps you to climb one more step]. Besides, she also emphasizes about teachers’ training:

> Capacitación en como orientarnos a nosotros, en cómo se utiliza el lector de pantalla, un recurso diferente a una diapositiva, un recurso distinto que puede ser un audio. Cosas que a la par por ejemplo que al estudiante le colocan la diapositiva en la pizarra y le puedan hacer escuchar un audio al mismo tiempo, porque se lee y escucha. [Training in how to guide us to use a screen reader. using a different resource from a graphic slide like an audio. Things like putting the slide on the board for the students and make them listen through an audio at the same time, because I can read and listen.]

All of these thoughts support what Mahiri (2011) establishes: “A critical challenge for teacher preparation and professional development programs, however, is to enable teachers to understand and utilize relevant digital technologies that can be viable resources for learning” (p.6). In this case, it indispensable that teachers have some kind of training on how to work with VI students and about useful technological tools that can enhance their teaching practices in class.

To sum up, nothing can be done or established in the same way every time. In this sense, everything should be improved in order to create higher levels of quality related to education. The improvement of screen readers as well as the teachers’ training, are issues of utmost importance for promoting more inclusive spaces for people with different disabilities.

4.1.3.2. Teachers’ interview.

In the following section, information and findings about the teachers’ interview will be presented. These findings have been categorized in the same way as the students’ results according to each research question. Therefore, this section is detailed in three themes: (1) **teachers’ experience about working with VI students who use screen readers**; (2) **teacher’s perceptions about using screen readers in EFL classes**; and (3) **screen reader’s benefits and expectations**. In this way, each topic that appeared from the participants’ responses are described to see their relationship with other studies. After working on the components of data analysis, the following categories emerged from the information gathered in the teachers’ interviews:

Table 7
Teachers' Interview

CATEGORY	SUB-CATEGORIES
Teachers’ experience about working with	A. Inclusive education’s evolution B. Teachers’ insights about their first class with a VI student C. Teaching difficulties in a class with a VI student

VI students who use screen readers	D. Assistive resources for VI students E. Activities applied in the EFL class with VI students F. Language skills improvement in EFL class
Teacher's perceptions about using screen readers in EFL classes	A. The role of teachers in the VI students' learning process B. Teachers' perception about the VI students' ongoing learning progress C. Perceptions about using screen readers in EFL classes D. Perceptions about working with VI students
Screen readers' benefits and expectations	A. Screen readers' benefits in VI students' English learning process B. VI students' challenges in their current English learning process C. Main concerns about screen readers

The following section provides an analysis of the data in relation to the research questions for this study. The information is organized according to each research question separately and the main points are summarized.

Research Question #2

How do teachers define their experiences about using screen readers in English class?

Beliefs

The data studied related to this research question derived from the questions 1, 2, 3, 4, 5, 6, 7, 8 and 9 on the interview protocol. The insights of the participants were coded primarily on similarities and essential facts from their experiences. The responses of the participants to the experience regarding research question # 1 were organized under the following topic: Teachers' experience about working with VI students who use screen readers. This category is made up by six sub-categories, which contain very important and meaningful information about the phenomenon of the study. These pieces of information, which are considered as invariant

constituents or units of analysis, went through a phenomenological reduction process. The six ICs are the following:

Category #1: Teachers' experience about working with VI students who use screen readers

A. Inclusive education's evolution

B. Teachers' insights about their first class with a VI student

C. Teaching difficulties in a class with a VI student

D. Assistive resources for VI students

E. Activities applied in the EFL class with VI students

F. Language skills improvement in EFL class

A. Inclusive education's evolution for visually impaired students

The findings showed that the term inclusion has been emerging strongly the last times. The participants mentioned the system of inclusive education has improved a lot in favor of each student with any disability. Related to the visual impaired ones, they established many advantages like: technological advances and language skills improvements. These aspects have let VI students overcome several difficulties in their personal life.

When talking about advantages of the inclusive education's evolution, the participants mentioned that the main advantage is the VI students have wider access to the information thanks to the growth of assistive tools for people with disabilities. In this way, Jorge said "It has improved in a better way, because students have had the opportunity to have access to the information."

In fact, people with disabilities have the right to the access of any kind of educational service, in this way they can increase their possibilities of improving their professional profiles as well as their skills in any academic field.

The theory in the literature review highlights a relevant topic about Digital Accessibility in which Ableser and Moore (2018) stated that this term aims attention at different physical or

sensory needs and how to connect this with appropriate accommodations by which VI students can have access to any kind of digital information. This intends to cover and show the results of the advance in education through inclusive technology. For instance, assistive tools have been created with the aim of helping VI students to develop their cognitive and language skills better, and this is possible due to the expansion of the inclusive education.

This ensures the right to quality education and quality outcomes in an EFL environment where a VI student can. Furthermore, the curricular plan in each institution can be benefited by having a richer base of inclusive curricular materials.

On the other hand, Zoili expresses that the evolution of the term inclusion in Ecuador has not been successful as many people thinks and this is due to the lack of information and experience about the topic. She believed that:

> The inclusive education has covered many useful components to help a VI student to succeed; however, it has not increased or evolved too much. Instead, the authorities have not paid attention to the real needs of each institution, so teachers are the ones who try to come up with any idea to help our students despite having no knowledge or experience about the topic. As a result, the student can be affected by bad teaching practices.

Therefore, she assumes that in spite of the improvements, the inclusive education needs to keep evolving and not only for students but also for teachers, too. Education encompasses these two main participants in the teaching and learning process, and hence the improvements or inaccuracies can either affect or benefit them. Furthermore, people who surround VI students are also involved in this process, therefore they should know how to act and offer their help in any situation that VI people can go through. Being disabled does not mean that someone cannot develop their skills as the other, instead they can progress as fast as any other common person. In this sense, the World Health Organization - WHO (2011)mentions that the concept of

disability has gone through a historical evolution and the families and friends, who do not know about the real concept, can become an obstacle for a VI student's personal and professional growth.

Generally, Ecuador needs to keep working on different projects that can boost the quality education for VI students and involve the main characters related to their environment like teachers and relatives who are the main support for their development. The participants' thoughts revealed different faces from inclusive education's evolution and these thoughts must be taken into consideration to apply policies that can reduce unlawful or unpleasant situations for our VI students.

A. Teachers' insights about their first class with a VI student

1) Materials' drawbacks
2) Lack of training

The findings demonstrated that the first class with a VI student was not too easy for any teacher. The participants felt that they did not have enough materials nor experience to deal with a VI student in their class. This is because of (1) materials' drawbacks and (2) lack of training in their whole professional lives. That is why, they had to get trained by themselves by looking for different strategies to apply in their classes, which sometimes worked for them.

Not having an adequate supply of materials adapted to teach VI student can be a disadvantage at the moment of teaching a foreign language. In addition, the student can feel he or she is not achieving their goals inside the classroom if we do not offer them understand tools to practice and learn. To this, Zoili added that "The first time, we just had really long exams with really long material with books that they couldn't use.". She clearly explained that there were some drawbacks related to the material when she started teaching a VI student at firs. Thus, she found herself in a difficult situation to solve. Additionally, she referred to the extensive time she had to take to teach her Vi student, "I had to work more hours with them.

We had extra classes too. We had exams of 40 or 70 questions and I had to read the questions to them."

As a result, Zoili had to work extra time with that student, but yet she did not know how to handle the situation very well, and this can make the student also confused about what he or she is learning. Similarly, Jorge felt the same way saying "I felt a little confused because not everybody had this kind of educational experience. I started making questions like what can I do with this? Or how can I look for a way to give the information to the students?". These two cases revealed the lack of experience in this topic together with the deficiencies of assistive material, and it also highlighted the importance of having adequate material to teach VI students.

In the lights of this, (Cox & Dykes, 2001) cite that "Teachers should introduce students with visual impairments to materials and equipment used in the same way and at the same depth as other students understand visual input" (p.72). This embraces the claim that having supportive material with appropriate accommodations such as digital information or adapted texts can be enriching and engaging for students in an EFL environment.

Another issue the participants mentioned was the lack of training. They felt they did not know how to teach these students and they were confused and afraid. Zoili stated her concern expressing that:

> At first, it was surprise for me because I was informed that I was going to have a VI student just one hour before the class, and I got shocked because I didn't even know what to do. If I don't have a specific training for doing this, I am not going to do that again.

Then, Jorge added "At the beginning I was a little nervous, I didn't have good strategies to teach.". Both teachers faced something new without knowing what to do or how to teach a VI student in a class with other sighted students. Their main concerned focused on the lack of

training because they did the accurate strategies to teach English to a VI student. In this sense, their experience was a newness not too pleasant for them due to their inexperience.

B. Teaching difficulties in a class with a VI student

1) Lack of information about assistive resources
2) Lack of empathy
3) Writing issues

The findings showed that the teachers had some difficulties in class with VI students like the (1) lack of information about assistive resources, (2) lack of empathy and (3) writing issues. These factors had a crucial affection in the teaching process because teachers did not feel comfortable to work with a VI student.

Not having enough knowledge about assistive resources affected his students' access to the information, and therefore the quality education decreased. In this sense, Jorge stated that "…in the past we didn't have access to the information. At first, it was really difficult to teach without having the correct information from the material or books, so I used to speak and translate all the time.". He practically described one method used in class which was not too efficient for his students. Certainly, this might have worked well for developing their speaking or listening skills, but not for writing or reading. He also highlighted that:

> Of course, the screen readers were really useful but I didn't know how to use them in favor of our students, so in my case I only gave him some simple exercises from the book in order for him to use them in the screen reader.

This was not definitely a good start, and difficulties like this can impede the internalization of the knowledge in terms of learning a foreign language where the four skills are important to develop another communicative system using a different language.

On the other hand, Zoili mentioned "Besides, writing was also really difficult because for me it was kind of impossible to find a way to make them write. I thought how can I teach

him to write with a screen reader if he doesn't see anything.". In this case, the writing process is not only difficult for a VI student but also for sighted students. Here is where the screen readers take action and as in the previous results, the students mentioned this was a big advantage for them to improve their writing. However, this teacher didn't know this, and she just affirmed that it was hard for her to handle writing in her class, which is comprehensible if she hasn't a correct training on how to use assistive technology to help her students and how to teach VI students.

Mahiri (2011) determines that it is vital for teachers learning about new digital technologies in order to make them part of our educative system. In the teaching and learning process there should be all the accessibility to resources that let visually impaired students be interested in learning a foreign language. In the same way, a teacher can be encouraged to use these resources properly.

Furthermore, Zoili mentioned another issue related to her feelings:

> Teaching is difficult because it is not in a lively form. I was trying to think like them to understand them; it is difficult to be empathetic. The most difficult part is to try to understand and how you can help them.

It is pretty understandable that this difficulty raised in her class, because she did not have enough experience working with these kinds of students. However, she tried to understand and find a way to teach them. As part of the teaching process, being empathetic is necessary to establish a good pedagogical relationship between teacher and students in order to gain their confidence. But, for her it was complicated due the lack of understanding and the way she experienced this situation. Every time a teacher has a new group of students, he or she will be a little nervous because teachers do not know pretty well what kinds of students will be there, and this can cause this lack of empathy that can affect the teaching and learning process. Much more if a blind student is assigned to her classes surprisingly. She supported this saying that

“Every single student is a universe and I try to understand them and these students are kind of difficult because I don’t share the way that they see life.”

As stated in the body of the literature review, we can find that specialists and psycholinguistics on second and foreign language teaching like Richards and Rodgers (1976) have claimed that the learner’s emotions and attitudes are involved in their language acquisition. Therefore, we can infer that feelings like empathy affect directly the teaching and learning process as well as the students’ progress.

In conclusion, if there is no preparation and empathy, any teacher will be capable of teaching correctly to his or her VI students. As a result, the learning process will not offer any benefit to these students, and the teaching process will be inefficient cutting off chances to improve.

C. Assistive resources for VI students

1) Screen readers
2) Braille
3) Oral support

The interviewees highlighted three main resources for VI students: (1) screen readers, (2) braille, and {(3) oral support. When they were asked about the resources the institution offered VI students ‘screen readers’ was the main topic they mentioned the most. Mostly, the three resources described above are vastly significant with specific tasks and characteristics which strengthen VI students’ learning process at their university. The participants highlighted that the institution offered some material in braille, and that the teachers used speaking as their main mean of communication, but the main support for them was assistive technology like screen readers.

First, the teachers declared that the university has an official license of the screen reader JAWS, so that the students can have free access to the its whole components. The results

revealed that this particular program was one of the foremost tools that VI students employ in their classroom, becoming more accessible and friendlier than other programs.

In this sense, Jorge expressed that “In class we had the opportunity to use a laptop with the installed program. In this way, my VI student participated in an active way, even though I didn’t know what it was or how to use it.”. He stated that his student used a screen reader called JAWS, but unluckily Jorge could not help him too much because he did not have enough knowledge to work with that system. However, he considered these tools as something valuable to make students more participative in class. To make the use of this screen reader clearer the Blind and Low Vision Group of the company Freedom Scientific (n.d.) states that this software “provides speech and Braille output for the most popular computer applications on your PC. You will be able to navigate the Internet, write a document, read an email and create presentations from your office, remote desktop, or from home.”. This means that this tool is a big advantage for VI students to learn more academic contents and communicate better their ideas. On the other hand, Zoili said:

> I didn’t have any guideline on how to evaluate these students, so the first test that we had together, I was thinking what we are going to do. Maybe, another classmate could help me just reading the questions … I thought that for them listening would be easier but it wasn’t because reading the questions and listening by using the screen reader at the same time is very difficult for them. They normally need to assimilate the options in a longer time.

In this case, the lack of knowledge about the different uses of the screen reader was a disadvantage to help her student, therefore she tried to come up with a way to do the test.

To sum up, the results showed that the main resource used in class by VI students in class was the screen reader which was useful for them. Nonetheless, both teachers did not know

how to use it in favor of their students. This partially affected the activities they did in class, and of course the students did not learn adequately the contents.

D. Activities applied in the EFL class with VI students

1) Useful activities
2) Useless activities

Planning suitable activities in class takes time and teacher have to consider the different students' needs and level to apply good strategies in class. Regarding this, the participants revealed the activities that were (1) useful and (2) useless in their classes with VI students.

Some of these activities were multiple choice, filling the gaps, and matching exercises. The teacher said that some tasks like these helped their students to improve their vocabulary and grammar. On the other hand, other tasks were not too useful and impeded the efficient progress of the teaching and learning process. Zoili said "Multiple choice is kind of useful but if you are using multiple choice don't give him more than two options. The can get confused.". An important fact from her answer was the suggestion she gave about the option that a multiple choice exercise should have only two options, in this way we will avoid any confusion in the activities for our VI students. That is why, researchers specialized in Universal Design suggested the some essential steps for curriculum developers and teachers like: stating cognitive support, scaffolding, having appropriate assessments for background knowledge, including clear strategies (Orkwis & McLane, 1998).

According to this, if a teacher provides good scaffolding strategies, it means to simplify a task to make it more manageable for a student. Besides, assessing what the student already knows is necessary to identify his or her weaknesses and strengths to offer him or her well-adapted activities. Finally, including explicit strategies makes the learning content more understandable for the student, and this is connected to what Zoili said about giving only two options in the multiple choice activities, in this way the student will develop the task efficiently.

Otherwise, Jorge mentioned that “The reading activities like multiple choice were favorable because I could adapt them and students had the opportunity with JAWS to listen to it in different speed levels. So they could improve their vocabulary.”. In this case, when an exercise like this works well, teachers to apply it with different skills like Jorge did with the reading skill, but we need to keep in mind that this can also work for other English skills like listening, or writing.

On the other hand, both teachers also described the activities that were not too useful. Zoili said “Filling the gaps is almost impossible, you have a specific structure, and you need to write words. And he was always confusing words. Also, matching is difficult because it has many options.”. Similarly, Jorge expressed “A complex activity, for example was to try to complete the missing words while listening to a song.”. This is the common gap-fill task that teachers tend to apply in class with the listening skill in order to test or practice a specific language content like vocabulary or grammar. The thing is that according to Zoili, VI students find difficult to write the words correctly because as we know English is spoken differently from writing, therefore they will have spelling mistakes.

E. Language skills improvement in EFL class

Currently, English has ruled the setting of learning a foreign language in Ecuador. That is why, integrating the main English language skills to create better communication strategies inside the classroom. The participants stated that it was obvious the improvement for the listening skills due to the fact that VI students they have improved their sense of hearing better. Then, the reading, speaking and writing also were favored by using screen readers and as the time went by, teacher could adapt the content better, too.

Zoili said “They could speak while they were listening, receiving and separating specific information while listening was one of my student’s improvement.”. Regarding this, Jorge also

mentioned that “They have improved the production skills especially writing. They can communicate by writing messages, etc.”

In this sense, Hayhoe (2014) points out that the changes that assistive technology has brought into students’ progress has redefined the way students are taught reading and writing skills. In fact, the benefits from using screen readers to learn any language are many, and the participants have agreed with this.

Jorge supports this expressing that “In the past, the writing skill was impossible to learn and now thanks to the adapted material they can write better and have an active participation.”. In addition, Zoili stated that “I had two students, they were really good at listening and when they had to write they had a problem with spelling because I didn’t have the material to teach them how to write”. This shows how important training and adapting material is for developing all skills in the same way.

Overall, the creation of different technological aids aims to improve and satisfy each individual’s needs. Obviously, not everything can be perfect, but at least the innovation is opening many doors to our VI students to achieve their academic goals.

Research Question #2

How do teachers describe their perceptions about using screen readers in class?

Beliefs

The data studied related to this research question derived from the questions 10, 11, 12, 13 and 14 on the interview protocol. The insights of the participants were coded primarily on similarities and essential facts from their perceptions. The responses of the participants to the perception regarding research question # 2 were organized under the following topic: Teachers’ perceptions about screen reader’s use in EFL class. This category is made up by four sub-categories, which contain very important and meaningful information about the phenomenon

of the study. These pieces of information, which are considered as invariant constituents or units of analysis are the following:

Category #2: Teachers' perceptions about screen reader's use in EFL class

A. The role of teachers in the VI students' learning process

B. Teachers' perception about the VI students' ongoing learning progress

C. Perceptions about using screen readers in EFL classes

D. Perceptions about working with VI students

A. The role of teachers in the VI students' learning process

Teachers have the primary responsibility to meet unique educational needs. Thus, they need to possess the skills and preparation necessary to provide specialized instructions. In this way, the participants described from their point of views the importance of the role of teachers in the VI students' learning process.

This is supported by Zoili saying that "As teachers we try to guide and to give tips or clues to make the understanding of the language easier for them.". Jorge also agreed expressing "The teacher must be prepared to confront these challenges.". These thoughts pointed out the assistance that we need to provide our students. And this is related to what Ramírez et al. (2017) expressed about the role of teachers in the inclusive special education. He considered the teacher as a key agent to make a more constructive environment taking into account the different students' needs.

In addition, Jorge also emphasized "Many years ago, the teacher was not too meaningful. The role of the teacher nowadays means to be the guide…. In this case, both can help. Teachers learn from students and vice versa.". Besides, Zoili gave a specific example about the teacher's action in class "With these kinds of students, you need to have a lot of patience, and you need to use different kinds of materials for example, your tone of voice is really important, and the way you teach them."

This means that teachers have a big responsibility and draw heavily on their expertise to support a VI student's learning process. Overall, the role of the teacher is highly important to offer all benefits of a more comprehensive and inclusive education. In fact, teachers are the guides who lead their students to success.

B. Teachers' perception about the VI students' ongoing learning progress

It is assumed that learning English is quite challenging for VI students, and as result a number of problems may arise in their educative process. That is why, knowing the teachers' perception is essential to identify what else we can do to help them. In this sense, Jorge expressed that:

> The current progress has been meaningful and a great a facility for students, if they get access to the recent materials, it is easier for them to continue their studies. With this they are reducing the assistant from other people. They have become autonomous in their learning process.

This means that the different advances from technology and education have benefited not only teachers but also students with different disabilities in several academic fields.

On the other hand, Zoili added "The only way to evaluate their progress is based on speaking and listening comprehension. When you try to produce something like writing, it is completely difficult.". Therefore, her recommendation is to keep track of their learning by checking their speaking and listening skills. This supports Donoso' idea (2013) when he states that Ecuador has a big challenge in spreading and improving high-quality spaces for disabled people to let them be part of the educative system and boost their skills to enhance their academic progress avoiding the course dropout.

In general, and from a personal point of view teachers should not only focus on the content class but also on what their students really need. It is the responsibility of the teacher to give strategies to his students they need to integrate and adapt them to their daily routine.

C. Perceptions about using screen readers in EFL classes

According to the whole previous information form student and teacher, screen readers have been a successful tool to learn and to access to the information. However, when the teachers were asked about this topic there were The results demonstrated two different opinions. Actually, it was interesting to hear their perception and the deep description they gave. For instance, Zoili said:

> They have a specific reader, a screen reader that they can use to do exercises like reading comprehension. The thing is that this program is really fast, the way that it speaks is fast, and they don't have the pronunciation or the correct accent, so they are just trying to read the whole word really fast. In that way, they cannot produce or pronounce correctly. So, for me it was completely difficult to get used to it in my class.

This shows that the use of screen turned out to be challenging and poorly understood which might have affected the student's comprehension about the content and exercises applied in class. She also added the following:

> The screen reader could be a good option if they are trying to understand the grammar or the vocabulary of the English language, but when they have to produce, when they have to pronounce or to write, it is not a useful tool in this case.

She also referred to the way in which students use the screen reader in class:

> They really need to use headphones. There are paying more attention to the volume or the voice of the program. And the rest are trying to test them. They are not paying to the me just to the program. It was a huge a distractor.

She expressed some difficult issues she had with her student who sued screen readers in class. This totally shows that the lack of preparation and knowledge about this assistive technology can affect both teaching and learning. Regarding this, Abner and Lahm (2002) carried out a study about Implementation of Assistive Technology (AT) with Students Who Are

Visually Impaired developed in Kentucky and applied to teachers in this area which showed that most of the teachers did not have enough skills to their VI pupils because they did not know what assistive technology was. As a result, there was not available support from the main authorities and this impeded the correct training related to these technological topics.

On the other hand, Jorge expressed his preferences about screen readers like "When they use it, they feel confident, they can do any homework and they try to solve any problem. They are active participants in the class.". This means they that screen readers have provided noticeable changes in their class development. Therefore, the learning outcomes stablished in class will be noteworthy and exciting for students with visual impairments.

In conclusion, both teachers expressed that they had to face two different scenarios; a positive one where a teacher learned and his student were active in class, while another negative one where the teacher could not deal with her students' assistive tool. It can be inferred that the benefit that can be taken from this tool depends on our professionalism and interest in helping those in need.

D. Perceptions about working with VI students

Teachers who work with VI students have a challenging role in teaching these individuals who rely on their other senses to attain information despite their limitations. In this sense, the findings showed that both teachers' perceptions differed from each other due to the different situations they got involved with their VI students. That is why, Zoili explained the following situation:

> My experience was with a big mixed group with other students that we commonly call 'normal' students. When you are mixing those people together, you need to spend more time, you have to give specific kinds of tasks to this group while the rest are doing other things together. You need more time with them. The learning process is really slow.

> You need more time to check all the tasks and you have to choose what kinds of things you can use and the things you can't use.

This demonstrates that there is not a specific environment for students with special needs where they can learn better. In this particular situation, Zoili explained how hard it was to work with sighted and VI students. She also talks about the big amount of time she had to employ to try to help them in their different requirements. To this, she also added:

> You need to prepare at first. When you are with other students, you already know the topic, so don't really need to prepare things, you just can be there and begin talking and give exercises. But with students with specific needs, you really need to prepare the class, you must take into account the time that you are going to spend with them.

In this case, the time was her big challenge because in a common English program you can study two hours a day but if you have someone with any disability, the time must be duplicated in order to provide enough information and practice by using competent tools to teach. According to this, Ableser and Moore (2018) specified many advantages from having digital accessibility through screen readers, of which are related to time. Apart from offering a flexible environment to develop their cognitive and language skills, this field also highlights the efficient use of time that is employed in performing the common task that sighted students do. Therefore, this reduces the pressure that VI students feel when they need to work in groups or when taking an exam to be handed in a limited amount of time.

On the other hand, Jorge talked about the different resource his student used like "They normally used a laptop with the program JAWS and digital materials. Here at the UPS, we normally use JAWS because the university has bought the license to use this program.". He referred back to the program that is used and the tools that were offered by the university where he works. This shows the commitment that the institution has with its students. This also demonstrates once again the importance of screen readers in teaching and learning

environments. This is supported by different researches like Kearns and Frey and McMorland (2013) who refer to assistive devices as machine-understandable by using a visual design to convey significant information. This means that it reinforces different systematic categories to be used in order to express themselves freely in a foreign language.

In general, we need to take into account the different situations a teacher can face working with VI students. The perceptions they can have will depend on the lively experience they go through. Therefore, we cannot label a situation as 'good' or 'bad', but this means we need to reinforce the weaknesses we find and boost the strengths that student demonstrate in class.

Research Question #3

What are the main benefits of using screen readers in English class?

Beliefs

The data studied related to this research question derived from the questions 15, 16, 17, 18 and 19 on the interview protocol. The insights of the participants were coded primarily on similarities and essential facts from the screen readers' benefits. The responses of the participants to the perception regarding research question # 3 were organized under the following topic: Screen reader's benefits. This category is made up by three sub-categories, which contain very important and meaningful information about the phenomenon of the study. These pieces of information, which are considered as invariant constituents or units of analysis are the following:

Category #3: Screen reader's benefits and expectations

A. Screen readers' benefits in VI students' English learning process

B. VI students' challenges in their current English learning process

C. Main concerns about screen readers

A. Screen readers' benefits in VI students' English learning process

1) Web accessibility
2) Language skills development
3) Autonomy

Regarding the previous information given by the participants (VI students and teachers) in the previous passages, it has been showed that assistive technology like screen readers have given VI students the opportunity to have instant (1) access to unlimited information from the web and their classes. On the other hand, braille is still an important tool and a critical part learning how to read and other daily skills for personal growth. However, screen readers try to fill the gaps that VI students have had during their academic training process. In fact, the participants highlighted two other benefits as: (2) language skills development and (3) autonomy.

Zoili emphasized that the program they used called JAWS was useful to develop some English language aspects. She exemplified the following "If you want that they complete the task like in grammar or in vocabulary use screen readers. Maybe reading too because they can read really fast."

This means that this tool is helping the development of the English skills mainly vocabulary which is important to construct the necessary context the students need to communicate with other people using a foreign language. Jorge also pointed out the importance of the screen readers saying that "They [VI students] have improved the listening first. They can develop different skills in order to solve different problems on reading. And, the most important we try to develop is the writing skills.".

Fostering English language skills is essential in any student's academic life. In order to do this, teachers must take into account students' profile and their needs to get the best accomplishment of the learning outcomes in class, in addition this will encourage a constructive communication between teachers and students.

Furthermore, Jorge talked about the how the student can become more independent with this device, “Doing by himself, he could construct his own knowledge. Specially in writing, speaking or listening.”. To this he also added the following quote:

> They try to minimize the assistant of other people. They feel condiment because they can do any kinds of exercises. Students are learning faster. In some cases, they can use the braille too, most of the time they try to sue technology. Some student preferred to use braille because they were accustomed. They were so sufficient managing braille.

In this case, Jorge reassures that the students can reinforce their autonomy by constructing their own knowledge. This does not mean that VI student do not need any assistance, on the contrary they need help but using a screen reader might reduce the human assistance to be replaced by a technological aid that VI people can work with by themselves. Thus, they can become more independent and they may identify their learning style on their own.

Actually, the constructivist theory, which is mentioned in the literature review, focuses on the previous idea about construction of one’s knowledge. According to this, Bada and Olusegun (2015) states that “Constructivism is an approach to teaching and learning based on the premise that cognition (learning) is the result of "mental construction. In other words, students learn by fitting new information together with what they already know” (p.66). This means that teachers need to create a more pedagogical relationship with VI students by encompassing different kinds of dialogues and settings where the student can feel more confident to learn by himself. On the other hand, Zoili gave a different opinion about the autonomy from what Jorge mentioned. She said:

> I don’t know if they can be independent learners. Using this program is like the base of knowing something, but this program is not helping them to be independent. To be

independent is when they just experience the language in the real world. If you are only teaching how to complete the book is good.

In fact, this was interesting to hear due to the fact that screen readers reduce the assistance of people, but VI people still depend on this device to develop their daily tasks. Indeed, the purpose of this tool is to assist people. Now, the thing is that maybe Zoili does not see the good point because she has not had the opportunity to be trained about this before which affected her teaching development as well her opinion about this topic.

In the long run, every advance or positive change that teachers can make will be directed to our students with the aim of helping them to overcome their difficulties. Moreover, the benefits in the EFL environment are bigger based on the language skills development which allow the student to have a more autonomous control over his or her own way of learning.

A. VI students' challenges in their current English learning process

1) learning English in a lively way
2) improving writing skills.

Currently, English learning is broadly recognized in every level of the world education. In Ecuador, university students are expected to master a B1 or B2 level according to CEFR. That is why, there have been some adaptions in the educational plan to teach English in an inclusive environment with the aim of improving the quality education related the English language skills. The government wants to boost the use of a foreign language which in this case is English. However, blind students still find it difficult to learn, therefore the participants have mentioned that some of the challenges that they face are to (1) learn English in a lively way and improving (2) writing skills.

It is well known that a person can learn another language faster if he or she is surrounded by a bilingual environment where people can practice by using a foreign language. Nevertheless, the reality in Ecuador is different because our mother tongue is Spanish and just

few people speak a foreign language. That is why, VI students find their English classes as the only environment to practice. In fact, Zoili had a strong opinion about this "We need to meet English lively. We really need to create a space or an environment where they [VI students] can feel that they need English or that they are learning English. Not just completing the text.".

When she said this, she showed her concern about how to make VI students have a good place to learn and practice English. What she meant was that despite having assistive aid, this is still not enough to provide them with a meaningful setting to learn and this happens not only in an inclusive environment but also in the common sighted students' classes. As a result, we can see that the term inclusion related to the EFL field is still growing up.

This supports what Hornby (2015) says about inclusion which is a complex concept that encompasses the significance of diversity, human rights' concerns, social justice and impartially matters, along with a social socio-political model for disabled people. However, the term inclusion is not well-understood yet, due to the fact that third world countries do not have the required conditions to apply appropriate inclusive policies. Subsequently, there not enough adequate spaces and resources to develop a real inclusive educative program for VI students.

Another challenge that came out from these findings was the difficulty in mastering English writing skills. In spite of the innovation of assistive technology, this skill is still VI students' weakness in their learning process. In fact, for sighted students is hard to write a good paragraph because this implies having a wide range of vocabulary and correct grammar structures as well as connectors to convey ideas appropriately. In this sense, Jorge said:

> The big challenge is yet the writing skill. Although nowadays they [VI students] can communicate by writing any letter or message, they still need to practice a lot in order to avoid spelling mistakes, which is their common difficulty. So, we have to focus on teaching more writing.

In this case, it is worth to mention Krashen's theory about language acquisition which says that acquisition needs noteworthy communication in the target language where speakers not always pay attention to the utterances' forms but to the core message they are conveying. This is the reason why visually impaired students learn more how to communicate in another language rather than writing.

Another important point to mention is that writing is difficult and it is even worse if there is not enough adapted material for teaching VI students. Teachers, normally tend to focus on the speaking or reading but they do not pay too much attention to writing, and it is because of the time it takes to assess this skill. However, writing should not be stigmatized as something impossible, rather we should try to find the right tools to apply and evaluate their effectiveness in class.

In general, the teachers' perceptions about the challenges that VI students face are accurate and they give us an idea of how to take action inside the class. Every action that we can apply should focus on our student needs, and cover several aspects such as relevant content, appropriate media and a correct teaching approach to reinforce their motivation to learn English.

B. Main concerns about screen readers

When there is something innovative to apply in class, there is always the hope of keep improving those innovations and mainly if that is related to the education. The findings showed that teachers focused on one main concern about screen readers 'a training program'. Within this training program, they shared the content they would like to see.

First, being professionals means that one has the competent skills to perform specific tasks in the educative field. The way that one becomes a professional in by training. That is why, teachers really insisted on this topic when they were asked about their concerns and expectations.

If we recall the information given about teachers' experience, we can infer that the first class that they had with a VI student was completely. In this case, it was her first experience and they did not know what to do. Then, they found out that their VI students used assistive technology, specially a screen reader called JAWS provided by the university. In that moment, the teachers suffered another shock because they did not know what it was and how to use. After that, both teachers experienced their VI students' classes in different ways. One teacher could learn a little bit more about the use of this device, conversely the other teacher could not and she showed her worry about it in most of the questions. That is why, Zoili mentioned:

> All of the technological devices are really useful if you know how to use them. You really need to know what you are trying to teach, how this program [JWAS screen reader] works. If I know how this program works, it's going to be easy for me to teach with it. So, I need a specific training with the program that I am going to use, I need to test it, practice with it. If I live it, I can teach it.

This is also supported by an Ecuadorian study which was carried out in 2018 in the Imbabura province. The conclusion of this research reflected the benefits of using screen readers in different fields. However, this also showed some limitations like the difficultly f acing to the information and the lack of training for teachers. As a result, the authors of this study created a guide about the benefits of screen readers in order to train different authorities, teachers and students about the handling of these tools (Basantes et al., 2018). Concerning this, Jorge also added:

> Screen readers are a good tool for them [VI students]. According to the management of the program. Teachers must be prepared to take action in the classroom when they have the opportunity to have VI students in the classroom. If they are not prepared, they will need help because they cannot set the students apart. They need to include them and that's the big challenge.

With this, his ideas totally agree with Zoili's ones. Training is necessary to know what do in this special situations. Their first class was impact for them because they did not know how to react. Therefore, being prepared is the most important aspect for teachers who work with students with special needs. As Zoili said, if they try it, they will know what to do.

Furthermore, the teachers expressed that the topics in the training program should adjusted to their own experiences. Jorge said:

> There should be training not only about how to use screen readers, but also about how to adapt the material for these device. The thing is that the students are who use the screen readers while teachers give the necessary material for them to analyze in with the program.

Actually, I found this opinion really noteworthy because from my own experience working with a VI student was difficult. I went through the same situations like the teachers from this study. Hence, my student could develop his speaking, listening and reading quite well, but writing was really difficult and as the teachers have said the process to review writing was too long and we did not have any material where the student can develop his writing.

In conclusion, teachers have the power to change lives, therefore it is extremely necessary that they are taught what to apply inclusive practices in their classes. That is why, they need to be able to identify their students' needs and choose the best strategies to teach to create effective class management tools.

CHAPTER V

Summary, pedagogical implications, conclusions, Recommendations

5.1.Summary

The purpose of this qualitative phenomenological study was to comprehend and describe the experience and perceptions that teachers and English Foreign language VI students about the use of screen readers in English classes. I collected data from three VI students of which two of them finished the sufficiency level at university and the third one finished the intermediate level. I can infer that teachers as well as VI students faced a big impact when they started English classes using screen readers. An attempt was made to understand this technological and educative phenomenon in the VI students' English learning process. This study was analyzed through one main research question: What are the teachers and visually impaired EFL students' experience and perceptions of using screen readers in class? And three sub questions: How do students define their experiences and perceptions about using screen readers in English class? How do teachers describe their experiences and perceptions working with visually impaired students who use screen readers in class?, and What are the main benefits of using screen readers in English class?.

In this chapter, I provide the most meaningful implications, recommendations and conclusions based in the findings of this study.

5.2.Pedagogical Implications

This qualitative phenomenological research showed support to the existing literature related to the benefits of using of screen readers in an EFL environment, such as web accessibility, language skills improvement and autonomy. As a result, the findings of this study implicate several perceptions about VI students` EFL learning process and the application of screen readers in English classes. On one hand, the students feel more comfortable using screen

readers that Braille in their daily activities. On the other hand, teachers still think that they need to acquire some knowledge and preparation about how to teach a VI student and about the use of screen readers.

This means that these two groups are interested in using new inclusive technologies in their teaching and learning processes, but they think they need more training to master this field. According to the findings, VI students think that Ecuador is trying to improve its educative system in regards to inclusion, but there is still something else to do to improve inclusion policies within the Ecuadorian class.

Pursuing this further, this research revealed that using screen readers carries many advantages like improving the access to information on the web. As it is known, internet is a word-wide tool that contains a lot information about everything. Therefore, professionals use it as their main resource to teach, learn, investigate, etc. in this case VI students really need this information to boost their academic development. Moreover, they can also improve their English language skills faster due to the advantage of time. The results were precise in terms of accomplishing effective tasks. This means that the students could develop these tasks in almost the same amount of time as their sighted partners in the classroom. This becomes to be one of the most successful results of using screen readers. That is why, the English language skills improved thoroughly including their relationship with their teachers and peers in the classroom. The most benefited skills were related to listening, reading, and speaking. Otherwise, writing was their weakness because the students still showed their insecurity about produce good written material by themselves.

On the other hand, teachers had to work harder and learn how to teach a VI student by themselves. This affected the way they taught students because they had a mixed group of VI and sighted students. Then, they also had to learn how to teach using a screen reader because they realized that they needed to have adapted material, so that the student can analyze it

through the screen reader effectively. Despite the fact that they partially agree that screen readers are beneficial, there were disagreements about the effectiveness of screen readers. The results showed that is true that these assistive programs are useful, but they also revealed that without preparation, English teachers cannot establish good strategies to teach a VI student with a screen reader. However, I believe that more research is needed to better understand and find the best way to teach VI students in an EFL environment. I totally trust that if there is a quality preparation and interest, both teachers and students will create a more effective environment where learning English and developing their communicative skills convincingly.

5.3.Recommendations

According to the results of this study and the literature contents, there are different perceptions from students and teachers. On one hand, students believe that screen readers have let them be more independent in mastering the English language skills despite the fact that they still are struggling with learning writing well; on the other hand, teachers believe this is partially true because VI students still depend on the program to learn, and that this do not let them learn English in a lively way. Teachers also, add that they need training about how to teach a VI student and to handle with a screen reader in class.

5.3.1. Ecuadorian universities

Knowing that English requirements and policies about have been boosted in the Ecuadorian education, it is necessary that the superior institutions as the universities offer a space where EFL teachers and students can get together and discuss about their experiences in teaching and learning. Besides, I would suggest that the English institutes form each university design adequate curricular plans where inclusive requirements are stated for every English level. In this way, the inclusion of VI students and others with different needs can be part of the EFL groups at the university. Furthermore, it is a good idea to implement training programs for English teachers to know how to react and teach a VI student. In addition, this training programs

should include the different uses of a screen reader and how to adapt material to teach English to them.

5.3.2. Ecuadorian EFL teachers

I would recommend to Ecuadorian EFL teachers to start sharing their lived experiences as VI students' instructors at the institution where they work, so that authorities can realize about the importance of inclusive education. In this way, teachers will feel more supported and less lost in their hard educative works. Furthermore, teachers could also start researching more about different ways to teach a VI student on their own, and about the weaknesses that the inclusive education has in our Ecuadorian universities related to the EFL field. In this way, the authorities may consider creating spaces where teachers can reflect on their own experiences and give solutions as a professional team.

5.3.3. Ecuadorian EFL VI students

My recommendation for Ecuadorian EFL VI students is to keep mastering screen readers to access to more Web information spaces, and try to find resources that can boost their own English learning. Furthermore, they should also talk to the authorities in their institutions to create spaces where they can share their experiences in learning English using screen readers and explain the benefits they have seen in mastering their language skills. In addition, and as they have mentioned their worries about their writing weaknesses, they should also talk to their teachers to develop strategies and materials to include more writing exercises where they can practice and learn this skill better.

5.4.Conclusions of the study

As a result of the analysis of the data I obtained from two EFL VI students and three university EFL teachers from an Ecuadorian institution about the perceptions and experiences from using screen readers in English classes, the following conclusions were stated. First, in Ecuador inclusive education's policies have not been implemented correctly in the EFL field

yet. However, the institution where the VI students took English classes, promotes programs about educative inclusion in other Spanish subjects. It seems that the institution really cares about its students with visual impairments and other disabilities. I found that the efficiency of time in developing tasks inside the class with sighted students was a big change. The VI participants compared the activities they do with Braille with the ones with screen readers, and they agreed that the advantage of reducing the time in developing learning tasks was high. Then, the accessibility to digital information has been the main benefit of screen readers. VI student can access not only to English language information but also to information related to their work fields that let them perform their activities successfully. VI students' perceptions and experiences have been valuable and a great help for them in order to learn as similar as their sighted partners. Besides, the benefits that VI students have mentioned are many and have allowed them to access to every kind of information, and be part of a better competent field to open many doors to a successful professional environment.

On the other hand, the teachers' opinions were a bit different because one of them did not feel totally sure about the efficiency of screen readers while the other one was really pleased with these assistive devices. It seems that the lack of information about what a screen reader is or how to teach a VI student can affect one's perception. Consequently, one of the participants showed her worry about whether a screen reader might be useful to learn English or not. Whereas, the other teacher showed his accordance with the application of screen readers in class because they let VI students improve their English language skills. In this case, I realized that a training program about screen readers and how to teach a VI student is necessary for English instructors. Moreover, sharing experiences about teaching VI students is essential in order for teachers to be aware of their daily teaching and to implement new strategies in the classroom. Besides, the teachers' perception about the benefits of using screen reader differ a little from each other. Both teachers agreed that the screen readers help VI students to develop

their listening and reading and speaking skills. While in writing the opinion were different. It is true that these assistive devices have boosted language skills but in terms of writing I found that there have not been specific materials to practice this skill. In general, the teachers' perceptions and experiences about screen readers in English classes highlight the necessity of keep including more educative policies that can encompass all the needs form our students. Those perceptions show not only positive points but also concerns about the effectiveness of these devices. In this case, teaches and authorities cannot stop researching about these topics to find productive and friendly solutions to include everyone.

CHAPTER VI

Proposal

Strategies to Improve English Writing Skills for Visually Impaired Students: A Classroom Teacher's Guide

6.1. Rationale

The aim of this proposal is to provide English teachers a selection of strategies to address the writing needs of visually impaired students. It must be emphasized that this proposal was developed based on the experiences and beliefs from different EFL visually impaired students and their teachers about using screen readers in class. It was clear that there was insufficient information about this situation and this guide will highlight some useful strategies to strengthen the writing skill which VI student have been struggling with. Also, it will let other teachers realize about the correct use and benefits of technological tools for visually impaired students to develop productive skills in a better way.

A famous activist Hellen Keller's quote mentions "Blind people are just like seeing people in the dark. The loss of sight does not impair the qualities of mind and heart". That is why, this proposal looks for improving VI students' learning process as well the English teaching process.

The following information is general, and the strategies are flexible to be adapted in every pedagogical situation and in any way that the teacher feels comfortable to teach and apply in the class.

6.2. Beneficiaries

The main beneficiaries of this proposal will be English language teachers and their visually impaired students including the institutions where they are attending.

6.3. Impacts

This proposal might have a relevant impact mainly on the educative field for people with special needs, in this case students with visual impairments, who can take advantage of this to improve their productive skill “writing”. Besides, teachers will be also benefited because there are the guides who need to adapt and present the material to be used by VI students. Teachers are the cornerstone of a language teaching and learning process, therefore they need to know and develop a more accurate curricular design for their students with special needs including those who do not have any disability. Unfortunately, Ecuador does not still have adequate spaces for people students with disabilities, and the classrooms are sometimes mixed with every kind of students. In this case, the teacher needs to find and apply a more dynamic solution in order for everybody to learn at the same pace. That is why, this guide will let teachers be more accurate in the writing skills which student have been struggling with. On the other hand, students get a direct advantage because they have developed speaking, listening and reading a lot but writing is still their weakness, and it is something that they really desire to improve and practice. Now with the big help from TICS, VI student have had the possibility to learn better and internalize their knowledge to start using their skills to feel their completely independent at the moment of speaking another language. Generally, every institution that work with students with visual impairments can also apply this in their curricular syllabus and also modify it according to the needs they can have.

6.4.Tips on Getting started teaching VI students who use JAWS screen reader

Sometimes it's hard to know how to get started teaching VI students because of the lack of experience, but the good thing is that teachers and students can take advantage of the technological advances like JAWS screen reader. Students benefit themselves from beginning technology instruction at an early age. If your student doesn't have typing skills, consider acquiring a braille display to go along with a PC laptop so that he or she can begin learning how

to use a computer with JAWS right away. If you aren't able to acquire a braille display, consider using a typing program like TypeAbility or Talking Typer to teach your student keyboarding skills.

6.4.1. Tips.

1. The first thing you should know is that any screen reader just identifies words, that is why you need to give your students adapted material.
2. Students should practice on accessible web pages first. These websites and web tools are properly designed and coded in order for people with disabilities to use them.
3. Google researching (whenever possible, locate accessible web pages for your student to choose from when they are given a project in class as Google searches take extreme amounts of time for VI students).

6.4.1.1. Guidelines to adapt material.

1. If you are using a course book in your English class, you should transcribe it into a complete word format. In this case, the word processor in the computer will be the main tool for working with the material using JAWS.
2. At the moment of transcribing, align the whole text to the left. It is unnecessary to center titles.
3. When there are exercises where your students need to complete or write something you should write an ellipsis (…), so they will know they have to write in that place.
4. As the English course book might have very visual content, try to have everything in a written way. No matter the colors or the design.
5. Avoid using pictures or tables unless they have a written description.
6. Avoid using too many bullets because the students can get distracted and lose their concentration.

7. Use hyperlinks so that the student can navigate in the whole document easily. It also takes him or her less time to go through different pages.

8. It is better if you use hyperlinks in the number of pages, for example: pg. 132 → pg. 132

This will help the teacher guide the student better, and the student will know where the exercise or topic is located.

9. When using a computer, it is very important to stay organized. Keeping related information in one folder can help students to locate information quickly. If he or she keep every document they create in Documents or My Documents without using folders, it may become very time consuming for them to find and open what they need.

10. Naming folders and documents appropriately is a good way to stay organized. Naming folders and documents by the date or page number may not be enough. They should be specific and short. Consistently advice your students to name their folders and documents so that they don't spend hours searching for what they need.

6.5. E-text writing strategies

This is mainly focused on spelling exercises and paragraphs composition practice in word processor to be used in JAWS screen reader. This will help the teacher to help VI students to improve their writing skills.

6.5.1. Pre- practice

VI students will always try to use their auditory memory, so before starting with any written activity, it is better if you let your students hear the vocabulary they will practice in class.

1. For example, a word can be read and said in a way that reminds the student of how it is spelt, e.g. Wed-nes-day. You can make them pronounce the words separating the syllables.

2. Another good idea, that also relies on auditory memory and association, is to think up funny ways of remembering the word, for example, tongue twisters, or using rhythm to practice the pronunciation of that word.

3. Finally, it is necessary that the students know what these words mean, so always try to give them different contexts and examples by which they can understand the meaning of the vocabulary they are checking.

6.5.2. Spelling exercises

6.5.2.1. Spell checker.

1. This will help your students to correct misspelled words. You can make a list of 10 words in word. You should write these words in a wrong way so that the student can identify what's the mistake and correct it.

- You can either make your student correct manually by letting the screen reader read letter by letter, or you can tell the student that he or she can use the spell checker to choose the right option. For example:

  Instructions:

  Read each word and identify the correct spelling.

  Locate the mouse's arrow over the word.

  Then click right on it to open the spell checker.

  Choose the correct option according to what you hear.

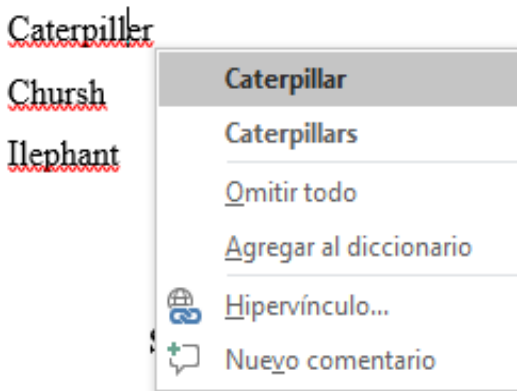

Figure 4. Word spell checker example

Note: When you ask your students to do this exercise manually, tell them to use the screen reader to read letter by letter, so they would identify the mistakes by themselves.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 15 to 30 minutes. Remember that you will also have other activities, and many other students in your classroom. However, if you're out of time, you can make them practice at home, too. Then, you can check their progress weekly, and see if this is helping to adjust the level of difficulty.

6.5.2.2. Clusters

This will help your students to use the correct clusters to form a word. You need to choose the patterns that you would like to practice in class. Then, you write these patterns and below you need you write examples to make students identify to which pattern the word belongs to by underlining the pattern in the word. You can tell your students that the underlining instruction will be for one pattern, the bolding for another one, and so on. For example:

Words with kn, wr, gn, mb

Spelling words

Knock, knee, write, wrap, gnat, comb, sign, wrong, climb, wren, lamb,

Instructions:

Identify the pattern ***kn*** and make it bold.

Identify the pattern ***wr*** and put it in italics.

Identify the pattern ***gn*** and underline it.

Identify the pattern ***mb*** and highlight it in yellow.

knock, **kn**ee, *wr*ite, *wr*ap, gnat, comb, sign, *wr*ong, climb, *wr*en, lamb

From the previous activity you can also give students examples of definitions or ideas that are related to each word, and make your students match them with the words they have

already practiced. In this way, your students should write the word with the correct pattern they practiced. For example:

Instructions:

Read the clue and write the spelling word. (clue)

1. Wool comes from this animal: …lamb
2. You do this with a pencil: …write

Another exercise from clusters is where the students need to write the correct cluster in the gaps to form the words. For example:

Instructions:

Write the correct cluster in each gap to form the word. Clusters: /ai/ /ay/

cl…m → claim

pr… → pray

s…lor → sailor

st… →stay

Note: The clusters cannot only be about consonants but also about vowels, it will depend on what students really need to reinforce. Remember always to apply a diagnostic analysis first to see what their real needs are. You can also find different types of clusters in the web.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 15 to 40 minutes. Remember that you will also have other activities, and different kinds of students in your classroom. However, if you are out of time, you can make your students practice this one time in your class, and then send them to keep working on it at home. Then, you can check their progress weekly, and see if this is helping to adjust the level of difficulty.

6.5.2.3. Jumbled words.

This will let your students know the correct position and order of each letter at the moment of writing words. Give your students a list of jumbled letters to make them form words that they have already practice before. For example:

Past irregular verbs

Instructions:

Form verbs in past from each group of jumbled letters.

nekw → …knew

oshce → …chose

drea → …read

You can also give them a clue if it is too difficult for them. For example:

Instructions:

Form verbs in past from each group of jumbled letters. The first letter has already been given at the beginning.

nekw → k…new

Note: You can choose any vocabulary topic to make your students practice as well as the level of difficulty.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 10 to 20 minutes. Remember that you will also have other activities, and different kinds of students in your classroom. However, if you are out of time, you can make your students practice this one time in your class, and then send them to keep working on it at home. Then, you can check their progress weekly, and see if this is helping to adjust the level of difficulty.

6.5.3. Simple sentences and paragraphs formation

6.5.3.1. Sentence formation.

Once your students have practiced spelling and of course the meaning of the vocabulary you have taught in class, you can start making them practicing in sentence formation.

In this section you will find useful and specific exercises to help your VI students improve in their productive writing skill.

It is worth to mention that this process is not fast, in fact it takes a lot of time, and even more for them. But, with patience and willingness you will fulfill their expectations.

6.5.3.1.1. Gap-filling.

1. Here, you need to tell your students that they will have to fill in the gap with the subject or verb according to the context of the sentence. For example:

Instructions:

Add the correct subject (she or they) according to the context of the sentence:

…works every day. → She works every day.

…study English. → They study English.

…writes a letter. → She writes a letter.

Another example is about verbs conjugation:

Instructions:

Write the correct form of the verb in past according to the context of the sentence:

I (buy)… some books. → I bought some books.

He (arrive)…late to class. → He arrived late to class.

We (go)…to the beach. → They went to the beach.

6.5.3.1.2. Identifying speech components.

Here, you have to tell your students that they will identify different speech components like subjects, verbs, conjunctions, adverbs, adjective, etc. Students will have to underline, bold or highlight with colors these components. For example:

Instructions:

Identify the parts of the speech in the following sentences. You have to underline the subjects, make the verbs in bold and highlight the conjunctions in green.

The boy and the girl laughed. → The boy and the girl laughed.

We went to the beach. → We went to the beach.

Another example is that you need to make your students identify which part of the speech is not included in the sentences, and then they need to write it to complete the sentence. For example:

Instructions:

Identify the parts of the speech that are not included in the sentence and write which component is left at the end of the sentence. Then, complete it with a suitable word.

Studied a lot yesterday… → They studied a lot yesterday…(S)ubject

She a beautiful woman… → She is a beautiful woman…(V)erb

Note: You can change the instruction by saying that the student needs to highlight the subject or instead of underlining, you can tell him to mark with an X the answer. Or just find the most suitable way to help him.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 15 to 30 minutes. If you are out of time, you can make your students practice this one time in your class, and then send them to keep working on it at home. Then, you can check their progress weekly, and see if this is helping to adjust the level of difficulty.

6.5.3.1.3. Rearranging words.

Here, you need to order the words to make sentences. This a common activity that they can develop to put each part of speech in the correct position of a sentence.

Instructions:

Identify the parts of the speech that are not included in the sentence and write which component is left at the end of the sentence. Then, complete it with a suitable word.

an, She, email, me, sent → …She sent me an email.

speaks, My, aloud, father → …My father speaks aloud.

Note: Remind your students that we always capitalize the first letter at the beginning of a sentence. Also, you have to highlight that punctuation must be included.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 10 to 20 minutes. If you are out of time, you can make your students practice this one time in your class, and then send them to keep working on it at home. Then, you can check their progress weekly, and see if this is helping to adjust the level of difficulty.

6.5.3.1.4. Completing ideas.

Here, your students need to complete the sentences with their own ideas to have an understandable context. Students will need to use complete ideas or just isolated words depending on the exercise. For example:

Instructions:

Complete the sentences by adding words that can fit in the context. Write your own personal answers.

When she got home… → When she got home she didn't find her dog.

At the airport… → At the airport we saw a famous actor.

Note: You can also give your students clues like the words they can use to complete the idea. If it is too difficult for them to come up with their examples, this can help them to understand better the exercises.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 10 to 20 minutes. If you are out of time, you can make your students practice this one time in your class, and then send them to keep working on it at home. Then, you can check their progress weekly, and see if this is helping to adjust the level of difficulty.

6.5.3.2. Paragraph formation.

Until this moment, your students have practiced isolated words, then words in context like in sentences. Now, it is time to practice paragraph formation.

In this section you will find useful and specific exercises to help your VI students improve in their productive writing skill by creating well-organized paragraphs.

Prepare you students in advance

Once you have taught them what is a paragraph and what its components are, you will be ready to sue the following exercises to practice what they studied previously.

6.5.3.2.1. Identifying the paragraph components.

Here, your students must be able to identify each component of the paragraph like the topic sentence, supporting ideas, examples, and closing sentences. For example:

Instructions:

Write the name of each paragraph component next to each idea. In this case just write the initials of the components: Topic sentence (TS), Supporting idea (SI), Examples (EX), Closing sentence (CS).

Firstly, everyone knows that dogs are the most loyal of pets…SI

In conclusion, dogs are part of the family, and we should respect their lives…CS

When it comes to pets, dogs make the best pets…TS

They will sit with you when you're sick, and they always play with you…EX

6.5.3.2.2. Ordering a paragraph.

This section is linked to the previous activity. As the students have already identified the paragraph components, it is time to order these ideas to make one paragraph. For example:

Instructions:

After identifying the paragraph components, you need to order the following sentences to form one paragraph:

→ When it comes to pets, dogs make the best pets. Firstly, everyone knows that dogs are the most loyal of pets. They will sit with you when you're sick, and they always play with you. In conclusion, dogs are part of the family, and we should respect their lives.

6.5.3.2.3. Writing a paragraph.

Now, it's time for students to write a paragraph. Here, you need to give the a main topic, and then guide them to write topic sentences, supporting ideas with examples, and a closing idea.

Instructions:

Write a complete paragraph using the main topic given:

Topic: What I know about owls.

Topic sentence: …

Supporting idea and example 1: …

Supporting idea and example 2: …

Supporting idea and example 3: …

Closing sentence: …

Topic: What I know about owls.

Topic sentence: I have learned many facts about owls.

Supporting idea and example 1: First, most owls are nocturnal which means they haunt at night.

Supporting idea and example 2: Next, owls cannot move their eyes in the socket so they must turn their entire head.

Supporting idea and example 3: Finally, the smallest owl is the Elf Owl which is 6 inches long and has a wingspan of 15 inches.

Closing sentence: Owls are very interesting birds.

→ I have learned many facts about owls. First, most owls are nocturnal which means they haunt at night. Next, owls cannot move their eyes in the socket so they must turn their entire head. Finally, the smallest owl is the Elf Owl which is 6 inches long and has a wingspan of 15 inches. Owls are very interesting birds.

6.5.3.2.4. Checking spelling mistakes in paragraphs.

In this section, you will challenge your students to remember and review everything they have learned in this guide. They will have to check spelling mistakes by paying attention to the context and organization of the sentences in one paragraph.

Instructions:

This paragraph contains some spelling mistakes. Highlight them and re write the entire paragraph out again with the correct spellings. If it is necessary you can also eliminate any useless word.

Every on August, Carlos come to my house with fresh energy as her parents feels every time they comes. The different activities we do let we get alongs beter and have fun the whole sumer.

Every August, Carlos comes to my house with fresh energy as his parents feel every time they come. The different activities we do let us get along better and have fun the whole summer.

Note: Remind your students about the order and components that a paragraph should have. Also remind them about punctuation and spelling rules again.

Time: the length of time will depend on how much you think they really need to practice this. The recommended time to do this task is from 20 to 40 minutes. This will also depend on how long the paragraph exercise can be.

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APPENDICES

Appendix A Consent letter

Letter of consent for Participation in Interview Research

Dear participant, the aim of this research is to comprehend the experiences and perceptions about using screen readers in an English institute in an Ecuadorian university. For this reason, this interview has been developed with the aim of collecting data to argument this important educative issue. The following letter of consent has been developed where you accept the participation and collaboration in this research. Thanks for reading the information about this interview. If you agree to participate, then please read the following guidelines:

- I volunteer to participate in a research project conducted by Ms. Revelo Jessica, from Universidad Técnica del Norte, Instituto de posgrado. I understand that the research is designed to gather information about academic work of faculty on campus. I will be one of approximately 5 people being interviewed for this research.
- I confirm that I have read and understood this information sheet and have had the opportunity to ask questions about this interview.
- I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences.
- I understand that my responses will be kept strictly confidential. I understand that my name will not be linked with the research materials, and will not be identified or identifiable in the report or reports that result from the research.
- I agree for this interview to be tape-recorded. I understand that the audio recording made of this interview will be used only for analysis and that extracts from the interview, from which I would not be personally identified, may be used in any conference presentation, report or journal article developed as a result of the research. I understand that no other use will be made of the recording without my written permission, and that no one outside the research team will be allowed access to the original recording.
- I agree that my anonymised data will be kept for future research purposes such as publications related to this study after the completion of the research.

_____	_____	_____
Name of participant	Date	Signature
_____		_____
Principal Investigator	Date	Signature

Copies: *Once this has been signed by all parties the participant should receive a copy of the signed and dated participant consent form, and the information sheet. A copy of the signed and dated consent form should be placed in the main project file which must be kept in a secure location.*

Appendix B Instruments

Interview Questions

Student's interview questions

A. Demographic information

What is you English level?

What is your vision state?

What is your gender?

a) Female

b) Male

B. Student's experience about using screen readers

1. How do you consider the inclusive education's evolution in students' lifestyles?
2. What were your insights of your first English class at the university?
3. What is the most difficult part of learning a language?
4. What kinds of resources does the current institution offer VI students to learn English?
5. What type of assistive technology do you use to learn English?
6. How did you learn to use screen readers? How was it the first time you used a screen reader in English class?
7. What kind of activities have you done in English class using screen readers?
8. Which of these activities have been more useful to learn English? Which ones have been less useful to learn English?
9. What skills have you improved by using screen readers?

C. Student's perceptions about using screen readers and their teachers' reaction

10. What is your perception about using screen readers in your EFL class?
11. What do you think about your teachers' preparation for helping VI students to learn another language?

12. How would you describe your teacher's reaction when you use the screen reader while he or she is explaining the content in the class?

D. Screen readers' benefits and expectations

13. What are the main benefits of using screen readers in your EFL class?
14. How would you define your ongoing learning progress in the EFL process?
15. What are your expectations about the upcoming improvements of using screen readers to learn English?
16. What are your expectations about teachers' readiness and willingness to help VI students to learn efficiently another language?

Teacher's interview questions

A. Demographic information

What is your area in the institution?

How long have you taught English?

What is your gender?

a) Female

b) Male

B. Teachers' experience about working with VI students who use screen readers

1. How do you consider the inclusive education's evolution in students' lifestyles?
2. How would describe your first class with a visually impaired student?
3. What is the most difficult part of teaching English to a VI student? Why?
4. What kind of resources does the current institution offer VI students to learn English?
5. What kind of assistive technology have your VI students used in class? How have they used it?
6. What kind of activities have you applied in your EFL class with VI students? Which of these activities have been more useful to teach?

7. Which ones have been less useful? Why? What skills do you think your VI students have improved most by using screen readers? Why?
8. What skills do they need to reinforce? How did you manage teaching them all of the skills together?

C. Teachers' perceptions about screen reader's use in EFL class

9. What is your understanding of the role of teachers in the VI students' learning process?
10. How would you define the ongoing progress of VI students in the EFL process?
11. What is your perception about using assistive technology like screen readers in an English class?
12. How do you feel when your students use screen readers in class?
13. What is your opinion about working with visually impaired students? How?

D. Screen reader's benefits and expectations

14. What are some of the benefits of screen readers in VI student's English learning process? What skills do they need to reinforce? How do you manage teaching them all of the skills together?
15. How does assistive technology help students to become independent learners?
16. In your opinion, what challenges do VI students have in their current English learning process?
17. What are the main concerns you have when you help a VI student to learn English through screen readers?
18. What are your expectations about the upcoming improvements of using screen readers to learn English?