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FACULTY OF ARTS AND HUMANITIES

SCHOOL OF ENGLISH LANGUAGE

TITLE OF PAPER

TEACHING ENGLISH AS A FOREIGN LANGUAGE TO A VISUALLY IMPAIRED STUDENT AT "ESCUELA DE EDUCACIÓN BÁSICA PARTICULAR LICEO PANAMERICANO CENTENARIO".

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SUBMITTED IN FULFILLMENT OF THE REQUIREMENT FOR OBTAINING THE BACHELOR DEGREE IN ENGLISH LANGUAGE WITH A MINOR IN EDUCATIONAL MANAGEMENT

PROJECT ADVISOR

Mgs. Ximena Jarrín Hunter

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**CATHOLIC UNIVERSITY
OF SANTIAGO DE GUAYAQUIL**

**FACULTY OF ARTS AND HUMANITIES
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CERTIFICATION

We certify that this research project was presented by **Defaz Moreno Andrea Michelle** as a partial fulfillment of the requirements for the **Bachelor Degree in English Language with a Minor in Educational Management.**

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STATEMENT OF RESPONSIBILITY

I, **Defaz Moreno Andrea Michelle**

HEREBY DECLARE THAT:

The Senior Project: **"Teaching English as a Foreign Language to a Visually Impaired student at "Escuela de Educación Básica particular Liceo Panamericano Centenario"** prior to obtaining the **Bachelor Degree in English Language with a Minor in Educational Management**, has been developed based on thorough investigation, respecting the intellectual property rights of third parties regarding citations within the corresponding pages whose sources are included in the bibliography. Consequently, this work is of my full responsibility.

Under this statement, I am responsible for the content, truthfulness and scientific scope of the aforementioned paper.

Guayaquil, on the 19th day of September of 2018

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AUTHORIZATION

I, **Defaz Moreno Andrea Michelle**,

Authorize the Catholic University of Santiago de Guayaquil to **publish** this Senior Project: **"Teaching English as a Foreign Language to a Visually Impaired student at "Escuela de Educación Básica particular Liceo Panamericano Centenario"** in the institutional repository. The contents, ideas and criteria in this paper are of my full responsibility and authorship.

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"Everything that happens to you makes you, you. Both the good and the bad. There is no truly good person who had an easy life. We are all confronted by challenges and obstacles and we must decide once they are over if we let them define us, or if we decide that they are just part of the picture, the rolling tide that goes in and out, or the exhale after the inhale. Always remember to breathe." (Thomas , 2018)

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ABSTRACT

This research paper has as aim to explore the needs of a visually impaired student EFL skills acquisition at "Escuela de Educación Básica particular Liceo Panamericano Centenario". The study will provide teachers some suggestions on how to develop adapted material for the English classes through the use of assistive technology and offer the institution key points as to how train teachers properly on inclusive education, in this case for the visually impaired individuals.

The data was collected through interviews and surveys; they were applied to three English teachers of a visually impaired student at the aforementioned institution. The findings provide important evidence as to what is failing in the institution regarding the correct implementation of adapted material in this subject. Recommendations were provided on what assistive technology the institution should acquire to properly aid the teachers and enhance the learning environment of the visually impaired student. Thus, providing a background for any further research to be made on the topic of visual impairment and second language acquisition, materials, adaptations, modifications or techniques to have successful outcomes as results.

Keywords: *English, English teacher, visual impairment, assistive technology, adaptations, inclusion.*

INTRODUCTION

In Ecuador, English has been taught for decades. According to the British Council (2004) it was in 1992 when it began to be mandatory for all schools to offer Bilingual education, English being the preferred language to be taught as it is deemed a Universal language. According to Ingerson (2018) from the American Mideast Educational and Training Services, English is spoken in more than 101 countries and is used as an official language in 35, which makes it a resourceful ability to be able to speak it and use it fluently.

According to the UNESCO (1994) in the Salamanca Statement and Framework for Action on Special Needs Education it was stablished that countries must assume as a matter of law or policy the principle of inclusive education, enrolling all children in regular schools, unless there were extraordinary reasons for doing otherwise.

This research paper merges both realities by exploring to what extent the policies developed by the Ecuadorian Ministry of Education (2013) under the Salamanca statement's guidance are being put into action at "Escuela de Educación Básica particular Liceo Panamericano Centenario" since it is a key component of our national curriculum to teach the aforementioned language. English teachers are the professionals that assume this task to effectively teach and embrace students with visual impairment in the mainstream educational setting providing the adaptations necessary.

STATEMENT OF THE PROBLEM

English has been taught mandatorily in Ecuador since 1992 thanks to an agreement signed between the British Council and the Ministry of Education and Culture (2004). Several changes have taken place during time regarding Education and EFL education in the country. In 2013, the Ministry of Education released an educative reform regarding inclusive education. This reform arms and protects students with special educational needs to seek education in regular schools.

In order to meet the needs of inclusive education students, the teachers must be provided with proper training and resources that help the students ease into the system and benefit of the curricula. It is known that inclusive education is challenging for teachers to implement as they have to deal with large classes, nonexistent adapted material and lack of proper training.

"Escuela de Educación Básica particular Liceo Panamericano Centenario" is one of the institutions that provides a space for students of inclusive education to experience the mainstream education system. At the aforementioned institution, a visually impaired student is set to achieve foreign language acquisition working under the same program and goals as the student's peers, however the teachers involved in the student's educational development have poor knowledge on the adaptation of course, homework, reading and assessment material for visually impaired students. This limits the inclusion of the student into the mainstream education system since their needs are not being catered for appropriately.

JUSTIFICATION

The importance to carry out this study lies on the needs of a visually impaired student EFL skills acquisition at "Escuela de Educación Básica particular Liceo Panamericano Centenario". The study is important for teachers who in the future will be involved in the development of the student's English skills. This study will provide teachers and the institution, suggestions on the available resources to be used by teachers to create course, homework, reading and assessment material aimed for the visually impaired students. Consequently, enhancing the student's approach or perception towards learning a new language despite their limitations or approach to reach mastery of it.

The study will be of great use for the parents of those who are visually impaired since the material for their child to be used will no longer be adapted by them but by the respective teacher who will know what specific skill the child needs to cover in the subject and create the material with that in mind. It would also be helpful for the parents since they will know that the school chosen for their visually impaired child is adapting effectively to meet the academic needs of their visually impaired child, therefore providing an inclusive environment in which the child can thrive.

The study is also relevant for teachers outside the English language teaching field since this paper could be used as an outside consulting source to be used when researching for tools to adapt materials to meet the needs of visually impaired students in other subjects since the information provided recollects information from other countries which enriches the options for them to choose from.

RESEARCH QUESTIONS

- What challenges do English teachers face when teaching children with visual impairment?
- Do English teachers at "Escuela de Educación Básica particular Liceo Panamericano Centenario" design adapted lessons for students with visual impairment?
- What type of training to adapt and teach visually impaired students do English teachers at "Escuela de Educación Básica particular Liceo Panamericano Centenario"?

OBJECTIVES

General Objective

To provide suggestions on the tools to be used to develop adapted material for the English classes of a visually impaired student at "Escuela de Educación Básica particular Liceo Panamericano Centenario"

Specific Objectives

- To identify the needs that English teachers have while working with a visually impaired student.

- To suggest the institution key information on resources available to teachers to properly adapt course, homework, reading and assessment material that meet the educational needs of visually impaired individuals.

THEORETICAL FRAMEWORK

1.1 DISABILITIES

According to The United Nations Convention (2006) on the Rights of Persons with Disabilities in their first article, states that individuals with disabilities are those who may present physical, mental, intellectual or sensory impairments in a long-term period. The aforementioned impairments may restrict interactions or create barriers that could hinder their complete effective contribution in society.

The Individuals with Disabilities Education Act (1997) (IDEA) characterizes a person with disabilities as somebody with mental impediment, hearing debilitations, speech or language impediments, visual hindrances , orthopedic disabilities, mental imbalances, severe emotional disturbance, brain damage or any other health or learning necessities that consequently requires adapted educational and related services.

In the literature of the Agenda Nacional para Discapacidades (Consejo Nacional de Igualdad de Discapacidades, 2017) it is established that a person with disabilities is anyone that has one or more physical, mental, intellectual or sensorial deficiencies regardless its origin. These individuals have restricted biological, psychological, or associative limitations to carry on one or more essential tasks in their everyday life.

The Inter-American Convention on the elimination of all forms of discrimination against persons with disabilities (1999) disability is mentioned as the permanent or temporary physical, intellectual, or sensory limitations which restricts the individual's capacity to perform one or several vital activities of their everyday life.

1.1.1 TYPES AND GRADES OF DISABILITIES

In Ecuador according to the Consejo Nacional de Igualdad de Discapacidades (2017) disabilities can be classified as: physical, visual, auditory,verbal, intelectual and psychological.

In the field of health, Carter (2018) offers definitions of certain terms based on The World Health Organization's (1980) International classification of impairment, disabilities and handicaps which is part of a manual of classification relating to the consequences of disease.

The aforementioned terms are be defined as following; impairment refers to any loss or abnormalities of psychological or physical assembly or function. On the other hand, any restriction or lack (resulting from an impairment) of ability to perform an activity in the same way or range than what is considered normal is labeled as a disability. Moreover, the disadvantages that restricts or prevents the fulfillment of a role by an individual, is defined as handicap.

Classification of Impairment, Disability and Handicap		
Impairment	Disabilities	Handicap
Intellectual	Behaviour disabilities	Orientation
Other psychological Impairments	Communication	Physical independence
Language	Personal care	Mobility
Aural	Locomotor	Occupation
Ocular	body disposition	Social integration
Visceral	Dexterity	Economic selfsufficient
Skeletal	Situational	Other
Disfiguring	Particular skill	-
Generalized, sensory, and other	Other activity restrictions	-

Table 1. Classification of Impairment, disability and handicap adapted from the World Health Organization (1980)

Roanld Berger highlights the relationship between the aformetioned terms in his book Introducing Disability Studies (2013) using the image bellow.
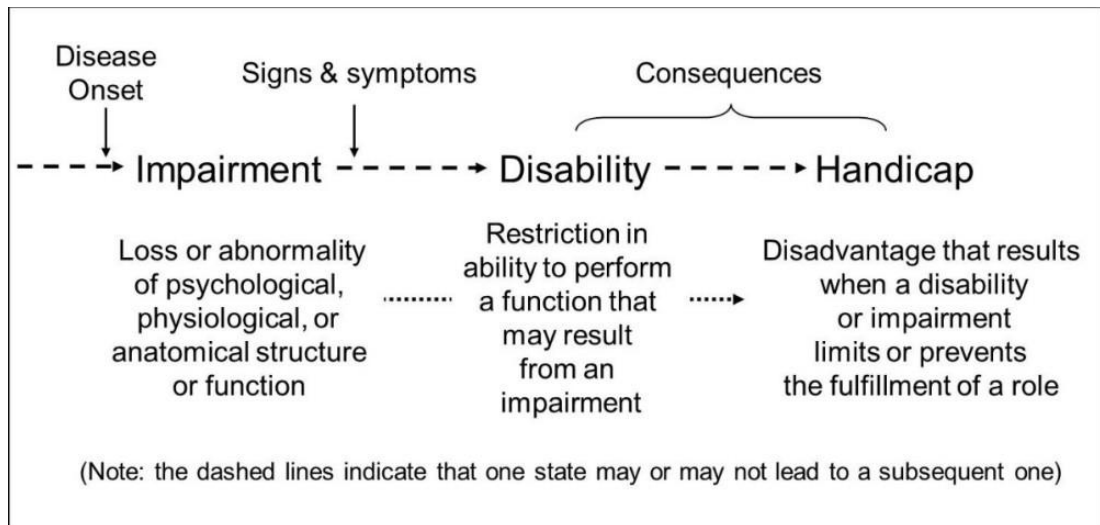

Figure 1: Relationship between Impairment, Disability and Handicap. (Matchett, 2017)

1.2 VISUAL IMPAIRMENTS AND CLASSIFICATION

As published by the World Health Organization (2001) in the International Classification of Functioning, Disability, and Health: (ICF); visual impairments and its classification are found under chapter two: sensory functions and pain, sub classification; seeing functions. The ICF incorporates sensory functions relating to sensing the presence of light and sensing the form, size, shape, and color of visual stimuli. It also includes: visual perception functions; visual field functions; quality of vision; functions of sensing light and color, visual perception of distant and near vision, monocular and binocular vision; visual picture quality; impairments such as myopia, hypermetropia, astigmatism, hemianopia, color-blindness, tunnel vision, central and peripheral scotoma, diplopia, night blindness and impaired adaptability to light.

In the last few years, much more information on the aforementioned topic has become available, as presented in the article "Revision of visual impairment definitions in the International Statistical Classification of Diseases" published by Dandona and Dandona (2006), the authors recommend to the ICD the use of the tables shown below to classify visual impairments in a person.

Category of visual impairment	Presenting visual acuity		Or central visual field*	Classified as
	Maximum less than	Minimum equal to or better than		
1	6/12 0.50 20/40	6/18 0.33 20/60		Mild visual impairment
2	6/18 0.33 20/60	6/60 0.10 20/200		Moderate visual impairment
3	6/60 0.10 20/200	3/60 0.05 20/400	20° or less but more than 10°	Blindness
4	3/60 0.05 20/400	1/60 (finger counting at 1 meter) 0.02 5/300 (20/1200)	10° or less but more than 5°	Severe blindness
5	1/60 (finger counting at 1 meter) 0.02 5/300	Light perception	5° or less	Very severe blindness
6	No light perception			Total blindness
9	Unspecified			Unspecified

Table 2. Recommendation for the categories of severity of visual impairment in the International Statistical Classification of Diseases. adapted from Revision of visual impairment definitions in the International Statistical Classification of Diseases (2006)

ICD code	Blindness, moderate visual impairment and mild visual impairment Level of visual impairment in a person
H54.0	**Blindness in a person** Visual impairment category 3, 4, 5 or 6 in the better eye. Following are subsets of blindness in a person: • Severe blindness – visual impairment category 4 in the better eye. • Very severe blindness – visual impairment category 5 in the better eye. • Total blindness – visual impairment category 6 in both eyes.
H54.1	**Moderate visual impairment in a person** Visual impairment category 2 in the better eye.
H54.2	**Mild visual impairment in a person** Visual impairment category 1 in the better eye.
H54.3	**Unspecified visual impairment in a person** Visual impairment category 9 in both eyes.
H54.4	**Blindness in one eye of a person** Visual impairment category 3, 4, 5 or 6 in one eye and no visual impairment in the other eye. Following are subsets of blindness in one eye of a person: • Severe blindness – visual impairment category 4 in one eye and no visual impairment in the other eye. • Very severe blindness – visual impairment category 5 in one eye and no visual impairment in the other eye. • Total blindness – visual impairment category 6 in one eye and no visual impairment in the other eye.
H54.5	**Moderate visual impairment in one eye of a person** Visual impairment category 2 in one eye and no visual impairment in the other eye.
H54.6	**Mild visual impairment in one eye of a person** Visual impairment category 1 in one eye and no visual impairment in the other eye.
H54.7	**Unspecified visual impairment in one eye of a person** Visual impairment category 9 in one eye and no visual impairment in the other eye.

Table 3. Recommendation for the categories of severity of visual impairment in the International Statistical Classification of Diseases adapted from Revision of visual impairment definitions in the International Statistical Classification of Diseases (2006)

1.3 LANGUAGE DEVELOPMENT IN VI CHILDREN

Language development in visually impaired children is a key concept to be explored since a fundamental component as sight is not available or is limited to the child, which restricts their learning experience.

Since language is mostly developed through a child's sensory exploration and stimulation, this could be impacted or stunned if a child has a sensory impairment. According to Muñoz (2004) children with visual impairments have the ability to learn how to compensate for the visual and auditory information that they may not be able to process. The child can use their other senses, thinking skills, and the hands-on experiences provided to make sense of the denotations related with words and sentences.

Cutsforth (1951) in his psychological study of the blind in school and society addressed the topic stating that no single mental activity of the congenitally blind child is not distorted by the absence of sight. He claimed that blind children's words were meaningless since they use visual terms that are not accessible to them, for example red, yellow (colors) to provide definitions of words such as blood, moon, etc.

Pérez-Pereira (2006) challenged Cutsford's claims by affirming that the meaning of words does not come exclusively from sensory experience and its conceptualization; children learn the meaning of words because they are repeatedly used by others in significant social interaction contexts in which the child may share meanings with adults by reading adults' intentions (pragmatic meaning).

According to Dunlea (1989) blind people are able to form concepts which are equivalent to those formed by sighted individuals. The difference is that, blind children, have difficulties in using a given word for a variety of items simply because they have restricted experience and cannot use it. As an example, the word dog cannot be used by the blind child if the dog is just walking but if it were to bark then the word dog would be used by the blind child because

their previous experience enables the individual to use it in that scenario. The same construct can be applied to any verb for a given action performed by other person, unless this action has an audible component there is no previous experience that the blind child can use as a reference to apply the verb connected to it. However, Dunlea affirms that this limitation does not affect the blind child's ability to form the concepts underlying meanings, but only restrains their access to external information.

Whatever happens around us in the environment is perceived through our senses, visual input provides key information that helps perceive and interpret it. Mainstream learning is very dependent on visuals to develop concepts. When a sense is affected there is a reduction on the sensory data provided to the child; this sense being vision, limits the opportunity of a child of acquiring skills through plain observation and imitation is discarded.

According to Bishop (2004) if the visual impairment where to materialize during early childhood, cognitive and language development will for certain be impaired. The author addresses plasticity that is the ability of a child's brain to reprogram itself since blindness forces the other sensory channels to provide initial sensory input data to the brain. However, the author informs that it is not an automatic or spontaneous process; it requires intervention and access to experiences that stimulate the brain usage.

On the other hand, Roe & Webster (2002) address that if the loss of vision is after five years, there will be visual memories accessible to the child to use as previous experiences therefore this will aid the learning process through the construction of images, and concepts that will be linked to the new concept and experience acquired prior in life.

As we can see, language development is controversial among authors; some agree that language will develop regardless of the impairment since another sense usually comes to play to compensate for the one that has been affected. The belief that these children are not able to learn or that their words lack meaningfulness is rejected based on current studies on the topic.

1.4   MULTIPLE INTELLIGENCES

Howard Gardner (2011) is the father of modern education, his theory of multiple intelligences is used daily by teachers all over the world to meet the needs of their students, providing a more personalized learning experience in which they will have the chance to thrive. Gardner formulated a list of seven intelligences; Smith (2002 - 2008) provided a brief definition of each intelligence based on Gardner's work.

Linguistic intelligence regards the understanding of spoken and written language, the ability to learn and use languages.

Logical-mathematical intelligence consists of the capacity to analyze problems in a logical way, complete mathematical procedures, and investigate matters in a scientific way.

Musical intelligence speaks of the dexterity in the presentation, composition, and appreciation of musical patterns.

Bodily-kinesthetic intelligence entails the potential of using parts or the our body to solve difficulties.

Visual/Spatial intelligence involves the potential to recognize and use the patterns in wide spaces or confined areas.

Interpersonal intelligence is concerned with the ability to understand other individual's intentions, motivations or desires.

Intrapersonal intelligence entails the capacity to understand oneself, appreciate any personal feelings, fears or motivations.

Gardner stated that these intelligences rarely work independently; they complement each other and together help the child develop skills and have a successful learning outcome. As visually impaired children go through their life with little to no visual stimuli to use their visual/spatial intelligence and further advance their education this would mean that these kids are not granted successful learning outcomes.

Priyadarshini (2015) in her analysis of Multiple Intelligence among Low Vision Children concludes that Gardner's Theory of Multiple Intelligences provides a theoretical foundation that recognizes students' diversity of abilities and talents. She adds that, even though not all children are visually gifted, they may have the possibilities of mastering other areas, such as music, verbal, or interpersonal knowledge, which provides visually impaired students participate actively in classroom learning, successfully enhancing their knowledge.

1.5 SECOND LANGUAGE ACQUISITION – ENGLISH AS A FOREING LANGUAGE

In the literature, Li (2009) describes Second language acquisition as the process in which a learner with mastery of his mother tongue learns another language without its social environment.

Eddy (2011) denominates foreign language as the one acquired after the mother tongue; however, it is one a person voluntarily chooses. She remarks that the foreign language is not essential in everyday communication contexts with other people living in their homeland or a country they moved to. However, there is a need of learning the foreign language depending on the interests of the individual or their plans for the future, which deem it useful to learn.

As mentioned in the previous literature, a visually impaired child is capable of acquiring their first language since the child other senses will adapt to meet the needs that the missing sense creates. Bishop (2004) expressed that learning is a concrete aspect that focuses on hands-on practices and interactivity, which does not create much trouble for VI students to attend further. However, during learning abstract concepts VI students may face with difficulties if they are not provided with more time to learn. Vision loss causes inability in giving meaning to their perceptions of the environment and without hands-on experience VI students cannot perform skills.

In conclusion, visually impaired individuals are capable of learning a new language even though there are some limitations to an extent, authors often agree and disagree on certain aspects but it all comes down to the care

provided to the VI individual that will ultimately determine the person's success on the task.

1.6 INCLUSIVE EDUCATION

In Ecuador, English has been taught mandatorily since 1992 thanks to an agreement signed between the British Council (2004) and the Ministry of Education and Culture (MEC). The public sentiment toward learning English is positive since the population consider it as the key to valuable employment. This has encouraged the government to design reforms in the curriculum to increase English language learning in public institutions and regulating the outreach of the language in private institutions.

A key problem with much of the literature on teaching and learning English as a foreign language in Ecuador is that there has not been any research directed towards this key component of our Curriculum. In spite of this, the Ecuadorian Ministry of Education provides teachers and Educational Institutions (EI) with parameters to follow or accomplish which deems an institution inclusive.

UNESCO (2009) defines inclusion as the procedures carried out to strengthen the capacity of an educational system to reach out to all learners. A general principle was introduced by UNESCO (2013), stating that inclusive education ought to guide all education policies and practices, the educational system must be able to provide equal opportunities in education for all learners, by respecting diverse needs, abilities and characteristics.

Inclusive education systems should be able to provide equal opportunities in education for all learners, by respecting diverse needs, abilities and characteristics of learners and by eliminating all forms of discrimination in the learning environment.

According to the Maryland Coalition for Inclusive Education (2001), an inclusive institution is that in which creative problem-solving actions are part of its way of handling issues. Problems are not a valid reason to send the student elsewhere, but they are viewed as opportunities for authorities, teachers, parents and students to reconsider the educational and social tactics being used to educate the community.

The Maryland Coalition for Inclusive Education (2001) stablished thirteen elements for inclusion, which are listed below:

1. "All students are members of their neighborhood school.

2. All students are assigned to age-appropriate grades in heterogeneous classrooms.

3. Student grouping and regrouping are based upon the individual interests and skills of all students and not only on disability types or labels.

4. Supports and special education services are provided in the classroom and coordinated with ongoing instruction.

5. Related services, (e.g., physical therapy, occupational therapy, speech therapy) are delivered in general classroom settings and coordinated with ongoing instruction.

6. The provision of supports for students (i.e., instructional, curricular, behavioral) is viewed as a school-wide need.

7. The instructional materials used for typical students are modified for assignments, homework and tests, as needed.

8. Effective teaching strategies and differentiated instruction are used to meet the needs of every child and to accommodate the learning styles of all children in the class.

9. The general education instruction and curriculum are used as the base for instruction to meet IEP goals.

10. Planned and structured activities are in place to promote social inclusion and friendship development.

11. Students without disabilities are supported in welcoming other students who have disabilities.

12. Collaboration among general educators, special educators and other school personnel occurs on an ongoing basis.

13. School administrators provide vision and leadership and welcome all students into their schools." (p. 8)

There are several justifications as for why inclusive educational reforms must be implemented by the authorities in charge of pushing forward reforms to educational laws.

UNESCO (2009) stablishes three types of justifications: educational, social and economic. The educational justification clarifies that the obligation for inclusive schools to educate all children together means that they have to develop ways of teaching that respond to individual differences and consequently benefit all children. The social aspects entail the school's capacity to change attitudes toward diversity by educating all children together and form the basis for a just and non-discriminatory society. Finally, the economic aspect of inclusion shows that it is less costly to establish and maintain schools that educate all children together than to set up a complex system of different types of schools specializing in different groups of children.
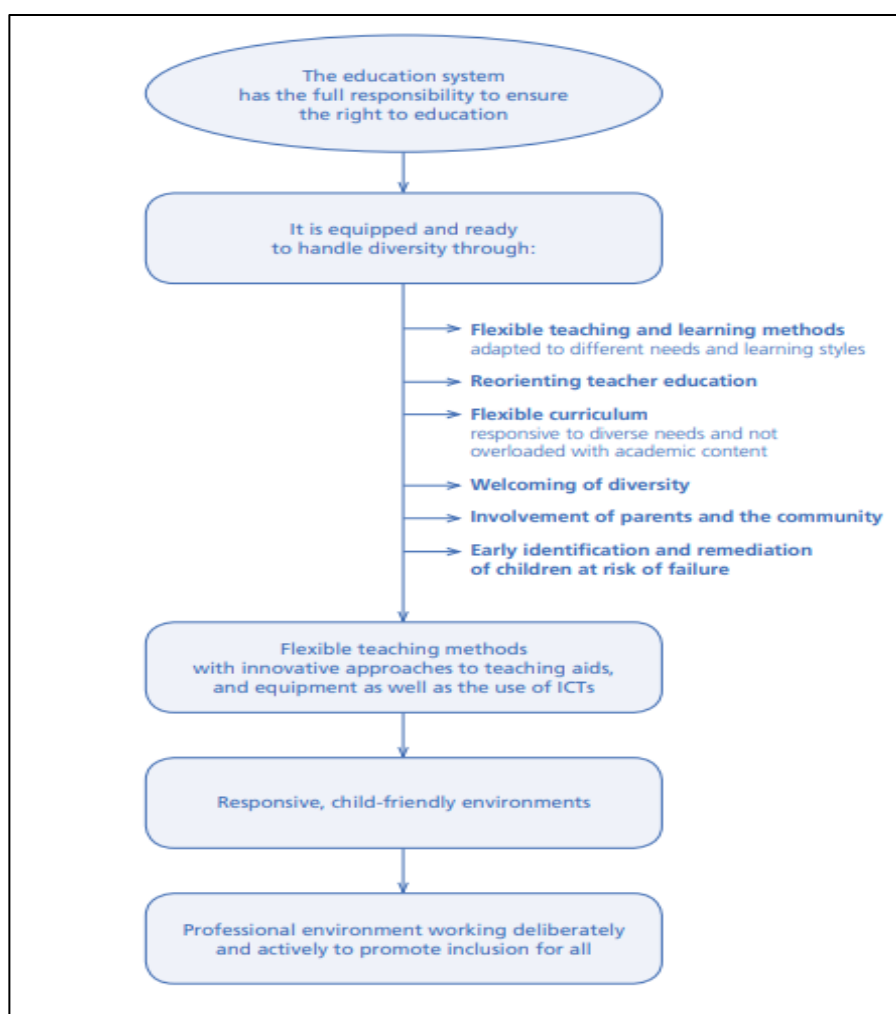

Figure 2. Education through the inclusion lens (UNESCO, 2009)

According to UNESCO (2009) documents, teachers' way of teaching is a critical factor to consider regarding any reform to be implemented to improve

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inclusion. Teachers are the ones in charge of making sure that each scholar is able to understand the instructions and carry out the expected tasks.

However, the teacher must be provided by the authorities in charge with the resources to learn how to cope with the alignments to be implemented in the classroom and curriculum.

According to the Escuela Municipal Para Ciegos "Cuatro De Enero" (2013) in their book "La integración un camino a la inclusión" an inclusive teacher is a person who is in charge of mediating and maintaining relationships between the special and regular institution, informs the educative community about the disabilities, limitations and abilities of the students in the mainstream education system, provides guidance to parents, teachers and the educative community about the appropriate means to help the student in the process of joining mainstream education effectively. The inclusive teacher is in charge of planning and implementing the curricular adaptations needed, the teacher adapts and designs the materials that the students will use.

The mainstream education system must assume the challenge of providing its personnel the appropriate training to meet the needs of the students who choose their institution as a place to seek to further advance of their educational background. According to the Ecuadorian Ministry of Education (2017) in chapter VI of the "Reglamento General a la Ley Organica de Educación Intercultural" states on the article 313 that teachers must be provided with permanent ongoing training, which can be provided in two ways; complementary or reformative.

Complementary training refers to the processes of professional development, training, updating, pedagogical and academic improvement to provide teachers with knowledge and skills different from those learned in their initial training. However, Reformative training refers to mandatory professional training that helps overcome the limitations that the teacher has in specific aspects of their professional performance.

Therefore, if a school has students with visual impairments or any other of special needs it is their duty to aid the teachers by providing the training that

will help them carry on with their professional performance accordingly meeting the needs of the visually impaired or special education student.

1.7   ADAPTATIONS

As known, visually impaired students often rely upon adapted material provided by the teacher. The adaptations to the material provided may consist of an augmented sized letter or braille transcription of the resources that regular students are provided. Nevertheless, the task results in a rather complicated and time-consuming due to its lengthiness; especially if the student's visual impairment is blindness.

There are two terms that are often misunderstood and are not used properly to address what each one exactly defines. These terms are adaptation and modification. According to the National Council of Education Research and Training of India (2015) the term adaptation refers to any adjustment made to the curriculum, classroom setting, assessment and materials provided to accommodate a student's needs to enable the student to actively participate and achieve the learning goals set. On the other hand, modifications include the changes made to the learning goals, teaching methods, coursework and assessment to meet the student's learning needs.

The National Council of Education Research and Training of India (2014) provides brief examples which are aimed for students with visual impairment. Adaptations could involve the use of audio tapes, electronic texts available, having peer/ classmate to assist with class activities, or simply re-organizing seating of a child who may be unable to focus, get easily distracted, or could distract others in the classroom. To demonstrate the students' knowledge, the teachers can rely on oral presentations and should provide extended time to complete assignments or tests. Aiding the student and teacher with computer software that provides text to speech/speech to text options, materials that meet the visually impaired student and allow them to reinforce and learn through hands-on experiences to better. However, as previously stated

modifications involve changing the tasks to accommodate a student's learning need , this can be achieved by implementing hands-on experiences, changing the conceptual difficulty level for the student with visual impairment since abstract concept are harder to explain for the teacher and for the student to understand.

Braille is the main form of adaptation for those visually impaired who have lost sight or are blind. According to the Braille Authority of North America (2002) Braille can be defined as the system of six tamped dots arranged in quadrangular cells. The six dots of the cell are numbered 1, 2, 3, downward on the left, and 4, 5, 6, downward on the right. The text in braille starts making sense by selecting one or several dots. There are 63 different characters that can be formed.
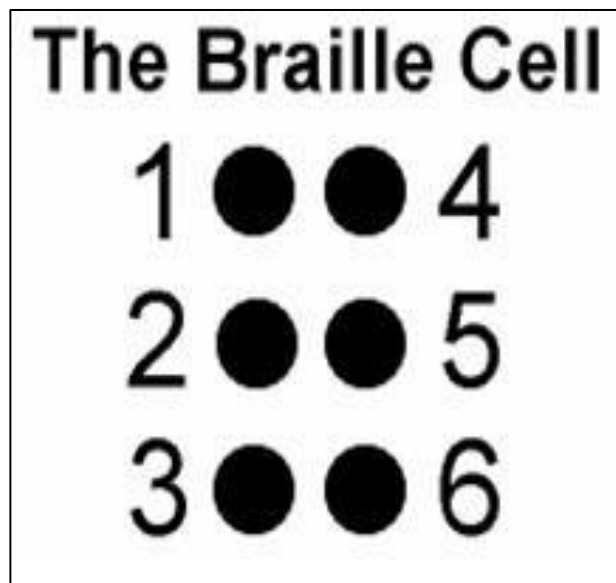

Figure 3. The braille cell (Braille Works , 2018)

ALPHABET AND NUMBERS

Figure 4. Braille Alphabet and Numbers (Braille Authority of North America, 2002)

The teachers of visually impaired students who might be blind or have progressive deteriorating sight must take into consideration that braille is an important way of adapting material since it is the written language that blind people use to communicate.

LITERATURE REVIEW

2.1 ASSISTIVE TECHNOLOGY

According to New Zealand's Ministry of Education (2018) assistive technology can be defined as the specific equipment and technology that students with educational needs use in class to improve their ability to participate and learn as their peers.

The American Foundation for the Blind (2018) states that assistive technology are objects that have been designed with the goal of helping people with vision loss or other disabilities. This includes screen readers for blind individuals or screen magnifiers for low-vision computer users, video magnifiers and other devices for reading and writing with low vision, to braille watches and braille printers.

There exist different types of assistive technology intended to meet the needs of those who are visually impaired. It can be software or hardware specifically designed to complete a certain task.

2.1.1 SOFTWARE

Ability Hub (2018) provides us a list of different assistive technology software for visually impaired individuals. Screen reader software as the following:

Screen Reader Software

JAWS v4.01 (Job Access with Speech) by Freedom ScientificTM	Software that uses an integrated voice synthesizer and a computer's sound card to output the content of the computer screen to speakers. JAWS support web browsers for internet access, e-mail programs, word processors, spreadsheets, presentation software, web development tools, database management software, and much more.
KeyRead (Junior ScreenReader) by RJ Cooper & Associates	Screen reader that uses the arrow keys as navigation control. It repeats each keystroke, has selective reading of screen, reads menus, word processors, web browsers, and even other types of application.
Hal Screen Reader by Dolphin Computer Access	The software provides audio output that makes up for what is happening on their computer by converting the onscreen display to speech. It provides access to software, including Microsoft Office 2000 and Internet Explorer 5.0. Braille output is also available if you have a Braille display.
outSPOKEN by ALVA Access Group, Inc.	Software with braille and/or speech output. Speaks and shows on a braille display. Message boxes, warning dialogs and tooltip text are automatically spoken system wide.

There exists an app named Be My eyes (2018), that was designed to use a video connection to connect blind people who need assistance to volunteers

who can help them to lead more independent lives. It is available on iOS and Android.

2.1.2 TACTILE GRAPHICS TECHNOLOGY

The University of Washington (2017) defines tactile graphics as a way of kinesthetic communication that deliver information through touch. These graphics bear content in maps, charts, building layouts, schematic diagrams, and images of geometric figures. They are often handmade by Braille transcribers as part of Braille textbook production. There are different ways of creating tactile graphic material; according to Willings (2018) there exist low-tech, medium-tech and high-tech approaches and tools.

Low-Tech Tactile Graphics Materials

Brailleable Labels and Sheets	Clear, blank self-adhesive labels that can be brailed and used to label graphics.
Feel 'n Peel Sheets: Carousel of Textures	Assorted sheets in a variety of textures and colors.
Graphic Art Tape	Tape used to insert tactile lines on graphs, mark hand positions on embossed clock faces, illustrate geometric figures in math, create diagrams and show features on a map.

Medium-Tech Tactile Graphic Materials

Swail Dot Inverter	Tool used to create simple diagrams, graphs, maps, etc. by embossing a series of single dots.

DRAFTSMAN Tactile Drawing Board	Tool that combines special film and a stylus or ballpoint pen to create instant raised-line drawings.
inTACT Sketchpad	Device used by students to create their own tactual graphics. It uses tactile drawing sheets that allow the visually impaired child draw on the sketchpad, make raised lines appear on the surface enabling them to feel the drawings as they go.
inTACT Eraser	Battery operated device that allows the user to erase mistakes but can also double as a dashed line creator. The eraser works like a miniature iron, heating the flat tip to approximately 180 degrees. It flattens tactile drawings quickly and erases them tactually.

High Tech Tactile Graphics Materials	
Swell-Form Graphics II Machine	Machine that allows the creation of tactile maps and graphics, the process starts by printing the graphic onto specialty paper using a standard printer or copy machine. Then run the paper through the Swell-Form graphics Machine, the heat emitted will react to the black ink and swell, creating a tactile image.
Picture in a Flash Tactile Graphic Maker (PIAF)	The machine makes raised line drawings on special paper, called capsule or swell paper. Users can draw, print or photocopy pictures onto the

	swell paper and pass it through the PIAF which will emit heat causing the lines to swell as it reacts to the carbon in the ink, and then the drawing will be ready to be read with the fingers.
Thermoform Machine	This machine reproduces braille text and tactile graphics in the most accurate way. It starts by placing a master copy or mold onto the machine, then placing a sheet of specialized plastic material (Brailon) on top of it and close the clamp. Once the clamp has been engaged, the next thing is to slide the heating element to the front and wait a few seconds. Once it is removed, there will be a tactual graphic of the master copy.

Table 4. Tactile Graphics Materials (Willings, 2018)

2.1.3 BRAILLE TECHNOLOGY

The American Foundation for the Blind (2014) describes braille technology as the device that produce books in braille and others that let people read information on computers and from the Internet. These devices are very diverse and have different range prices according to what they offer to the user. The website "Teaching Students with Visual Impairments" (2018) offers a detailed description of the available braille technology.

- **Refreshable Display** is a device that operates by lowering and raising different combinations of pins electronically to produce in braille what appears on a portion of the computer screen. The special display connects to a standard computer with a special cable; it uses the information appearing on the computer screen, translates it and displays it in braille, a line at a time. There are refreshable braille devices available that aid note taking that allow to input a full 20, 40, or

80 character, the device that attaches in front of the keyboard on a standard computer. The device provides direct access to the material, providing the student the ability to check format, spacing and spelling.

- **Braille Printer/Embosser** is a printing device that can be attached to a computer or a braille note-taking device that is used to produce a braille copy of text. The students are able to print a braille copy of their personal notes and written work. In order to translate a computer file into a braille document, it is necessary to also purchase a braille translation program.

- **Braille Translation Software** are technological devices that convert printed text into braille. The translated text can be printed using a braille embosser. Duxbury Braille Translator, MegaDots, and Braille 2000 are commonly used programs.

- **Electronic Braille Note Takers** are devices that allows the user to take notes in class using either a Braille or standard (QWERTY) keyboard. The information can later be moved to a computer for storage, or printing purposed in either braille or standard English. These devices have word processors, appointment calendars, calculators or clocks, and can do almost everything a computer can do. More specialized devices provide speech programs with braille input and refreshable braille displays.

2.1.4 AUDITORY ACCESS DEVICES

Willings (2018) states that auditory devices that help a student access information easily. Willings lists the following devices that aid the everyday life of visually impaired students.

- **Recording Devices** is equipment that allows a student to record an instructional lesson for studying, do homework and take notes during

class; however, it is important to request permission from the school before starting to use the devices since there may be strict policies against it. The devices used to record and listen to can be tape recorders, CD players, MP3 players, iPads and iPhones.

- **Auditory Books** can refer to books that have been recorded and can be accessed by visually impaired individuals or equipment developed to be used with audio books, these devices have variable speed settings at which the special disks and cassettes are played.

- **Electronic Dictionary w/ Speech** is a dictionary in which speech can be used as input for a student who cannot access a print dictionary. These dictionaries often include thesaurus, are portable and powered by batteries which make them convenient to those who might require them. It offers a QWERTY keyboard that aids to enter the words and the processed info is produced both as text and audio.

2.1.5 3D PRINTED AID

The University of Wisconsin Stevens Points (2018) defines 3D printing as the process of creating a physical object from a three-dimensional digital model, the final product is obtained after layering the preferred material, usually plastic.

3D printing technology aids the visually impaired student by receiving more concrete material to experience things in which oral or braille descriptions are limited or cannot effectively meet the needs. Currently there is no need to study design to be able to access and create your own material from scratch. Nowadays, there are several programs and open source software that enables, in this case; a teacher of a visually impaired student, access unlimited designs and adapt it to meet the specific needs of the student.

Brauner (2018) from the Perkins School for the Blind provides a list of 3D resources that offer training, tutorials and websites to aid the use of 3d printers to cater to the needs of our visually impaired students:

- **Thingiverse** (2018) is an open platform community of designers whose aim is to discover, make, and share 3D printable things.

- **Touchsee** (2018) is a website designed to make life easier for those visually impaired. The person types in the desired text into a blank box and it will be converted into braille and appear on a label. To create more than one label, the person just needs to press enter. The labels that have been created can be downloaded to be 3D printed.

- **Touch Mapper** (2018) Open access websites that allows the user to easily create custom outdoor maps for any address that entered. The map can be 3D printed or embossed.
- **Tinkercad** (2018) is a free online collection of software tools that help people create 3D designs that can be used in the educational field or others.

Education is always evolving, and it is a teacher's responsibility to catch up to it in order to provide students with the best learning experiences to create meaningful experiences which will generate long-lasting learning. If the student is visually impaired, is up to the teacher and the authorities to provide stimulating learning experiences in which the student does not miss out on things just because of their impairment.

METHODOLOGY

It was decided that the best procedure for this study was the case study design since the characteristics of the research to be studied is unique in its context, the context being the school.

Gillham (2010) describes case study as the research of an individual or community case which can only be studied or understood in context, exists in the here and now and that lacks precise boundaries due to the combination of the case context. The author states that a case study research has a great potential that other research methods do not hold. Since the subject of investigation is the main concern, the meticulous description of the case offers a window for changes to be made by those in charge. A case study also provides a helpful insight into the particular characteristics of the subjects of study providing better understanding of the situation and improvement opportunities.

Yin (1984) expands on the definition of case study stating that this type of research highlights the details of a limited number of events or situations and their relationships in a specific context. The author expresses that this method is used to study real-life situations which boundaries between the context and the phenomenon are not evident. The method provides basis for the future application of ideas and new approaches.

According to Krishnaswamy, Sivakumar and Mathir (2009) case study provides an analysis and report of a particular situation with respect to the different phases of its totality. Lodico, Spaulding, & Voegtle (2006) further expand on the topic by explaining that this research method usually tends to focus on small groups or individuals within a group and document the group or individual's experience in a specific settings or situation. Gerring (2007) describes it as the intensive study of a particular situation or individual which eventually will shed light on a bigger case.

The aforementioned literature is important because it confirms that the characteristics of this research paper meets the criteria of a case study research method. The characteristics being that having a visually impaired student at "Escuela de Educación Básica particular Liceo Panamericano

Centenario" is an individual occurrence within the institution. The research itself will provide the institution with new ideas and approaches that will help the visually impaired student to effectively engage in the mainstream education system.

The data recollection tools used belong to the mixed methods approach. The applied techniques were interviews (qualitative) and surveys (quantitative). According to Mills (2010) this particular research design works well as a mixed methods research, as myriad approaches to research design, analysis, and interpretation are possible, since it offers a way to record the complexities of the real-life situations being studied. This combination of data gathering tools enhances the validity of the study since the qualitative analyses involve descriptive precision and the quantitative analyses ensure numerical precision.

3.1 BACKGROUND INFORMATION

"Escuela de Educación Básica particular Liceo Panamericano Centenario" is a private institution located at the south of the city of Guayaquil. The institution has more than 47 years of experience teaching the youth through an integral and inclusive academic program, with high national and international standards. The institution currently provides initial and elementary education, the elementary section has 14 classes ranging from second to seventh grade. The school provides 20 hours of English classes per week, 13 hours of language arts, 2 hours of speech, 2 hours of science in basic and 3 hours in elementary, and 2 hours of Art.

3.2 PARTICIPANTS
The participants of the study are 3 English teachers of the student with visual impairment.

3.3   DATA GATHERING INSTRUMENTS

Since the Exploratory research design is using a mixed method approach there where two types of data recollection instruments used.

The first data collection instrument used was an interview retrieved and adapted from the National Center on Deaf-Blindness from the paper Classroom Observation Instrument for Educational Environments Serving Students with Deaf-Blindness by Taylor, Stremel and Steele (2006). The other method used was a survey with open ended and structured questions, the open-ended part of the survey was retrieved and adapted from the Disability Studies Quarterly Journal (2005). The structured part of the survey was retrieved and adapted from the paper named "Perceptions on Inclusion in Elementary Schools" (2015)

3.4   ANALYSIS OF RESULTS

3.4.1   INTERVIEWS (Appendix 1)

- **Question 1, 2, 3, 4: What are the student's STRENGTHS? How have you used the student's strengths in planning for his/her educational program?, What are the student's WEAKNESSES?, How have you used the student's weaknesses in planning for his/her educational program?**

The teachers interviewed listed different strength and weaknesses that they perceive in their student during their classes. The strengths mentioned were the following: proactive, enthusiastic, friendly, independent, friendly, has a good space awareness, is independent and straightforward. This allows us to appreciate the varied way in which teachers perceive the student, all of them agree that the student is friendly, which can mean that in her educational environment she is accepted, her peers do not exclude her.

On the other hand, there were several weaknesses that the teachers perceive on their student. They stated that the child could be sometimes blunt or indifferent towards the teacher or the subjects. She complains on the quantity of coursework she has to complete and is stubborn to accept when she has

misbehaved. She is also perceived as moody, talkative and easily distracted. These perceptions only describe the normal behavior of a pre-adolescent child, the weaknesses mentioned by the teacher do not impact the student's development in the classroom or among her peers.

The student shows spatial intelligence although this is linked to visual intelligence, this demonstrates that the student has worked around efficiently to adapt to her environment and independently manage around as much as possible.

The student's interpersonal and intrapersonal intelligences allow the student to engage in the classroom environment, creating friendships and good relationships; this allows the student to be aware not only of their personal needs and frustrations but also from those around.

Question 5: In what ways is the student included in the general education curriculum?

According to the responses provided by the interviewed teachers the student is included in the general education curriculum as much as possible, they provide audiobooks of the subjects taught. However, there are limitations to these efforts since there are some skills that they do not understand how to properly create adaptations to reach their fulfillment or know how to provide the instruction when they lack the training and appropriate tools to offer the student with an accurate instruction.

Question 6: In what ways does the student interact with same age peers?

The teacher interviewed provided similar answers in which they agreed that the student gets along nicely with the other students in the classroom. They provide help when it is needed from them and work efficiently when paired with the visually impaired student as mentioned before.

Question 7 and 8: How do you provide follow up to the student's activities? How do you grade the student's performance?

Varied answers where provided by the teachers interviewed, some teachers mentioned they try to do but since they lack proper training such as proficient

braille reading skills it is time consuming and if they cannot do it in class then they don't do it all which is negative for all the parties involved since it is their duty to do so in order for the student to reach the educational goals setup. The teacher also expressed that homework is not provided to the student, because the teacher lacks knowledge on how to create, grade it or what to evaluate. Other teacher expressed that they give follow up to the progress the student makes, since the subject is art the teacher cannot provide the student with a good or bad note based on the production because the student is treated as any other regular student and what counts is the effort and the progress. The other teacher explained that the only follow up provided to the student is during class, the teacher goes to the student's desk and checks what is being done. However, the teacher expresses that it is a difficult task because he lacks the proficiency in braille so checking complete tasks is difficult and time consuming.

Question 9 and 10

Do you provide adapted material to the student? If so, what kind? If not, Why not?

What kind of activities do you implement in the classroom to meet the VI student needs?

The interviewees shared similar answers in which they explained that they sometimes provided material adapted to meet the needs of the visually impaired student. However, the only resource they have to adapt material is a Mechanical Perkins Machine that is used by the student in the institution. One teacher mentioned that adding texture to the paints and providing high relief stencils to the student aids the development of the tasks.

Other teacher explained that once when practicing vocabulary, he tried to engage the student by using smells that some cards had so by stimulating the sense of smell the student had to find the matching card. Other teacher explained that they use texturized material to represent certain objects, however the process of creating the material is time consuming and the teacher is not provided with enough material destined to do so. The teachers

agreed that pair work is their preferred technique because it helps them having a student guiding or providing instructions on how to complete the coursework to their classmate with visual impairment.

ANALYSIS OF THE INTERVIEW

- The visually impaired student strengths are proactivity, enthusiasm, friendliness, independence and space awareness
- The weaknesses of the visually impaired student are bluntness, indifference, stubbornness, moodiness, short attention span and chattiness.
- The teachers have tried to incorporate the student's strengths when planning educational activities; however, her weaknesses are not being used in favor, which should be taken into consideration for further attempts.
- Teachers try to incorporate the visually impaired students in the general education curriculum.
- The student interacts in a normal way with her classmates.
- Teachers do not provide follow up to the students activities
- Teachers grade the student's performance according to the progress being made.
- The teachers provide adapted material to visually impaired students but not often.
- The teachers rely on pair work activities as the activities implemented to meet the needs of visually impaired students.

3.4.2 SURVEY (Appendix 2)

The participants were asked to fill out a survey that consisted on two parts. The first part consisted on seven open-ended questions, whilst the second part consisted on six structured questions in which the participants had to choose which number from 1 to 4 to determine their answer. The numeric scale represented the following parameters: 1= Strongly Disagree, 2= Disagree, 3= Agree, 4= Strongly Agree.

PART 1

- **Do you have students with special needs in your classroom?**

All the participants answered positively to this question.

- **What kind of special needs do they have?**

The participants mentioned that their students have different types of disabilities such as autism, hyperactivity, Asperger, dyslexia, short-term memory, physical and sensory impaired students.

- **Do you think that the needs of the children with visual impairment are met in your classroom?**

Two participants agreed that the needs of the visually impaired student are not being met. One participant expressed that the subject taught is visual arts, therefore what counts in this case is the aesthetic production from the student perspective based in sounds and tactile stimulus. On the other hand, the other teacher expressed that the number of students and the disruptive behavior where to blame for students needs that have not been met.

One teacher expressed that yes, the student needs are being met but it is difficult to achieve.

- **What positive factors do you see by being a teacher with visually impaired students?**

The participants provided answers that varied, a teacher expressed that she sees as a positive factor the challenge that learning Braille and adapting material represent.

Other participant expressed that thinking in how to translate a painting into a sound or a sensorial game is a positive factor because in this way the outcome is a very entertaining and nontraditional class that students really get to enjoy.

Other teacher expressed that learning how not to rely on the student's previous experience or imaginative skills is a positive factor because it allows the teacher to rethink all the classes and not let the fall into the same boring traditional patterns.

- **What do you see as obstacles to fulfill your role as a teacher with visually impaired students?**

The participants view as an obstacle factors like time, number of students, characteristics of the group, the number of students with other special needs besides the visually impaired student in the classroom, the creation of didactic material, lack of proper training and the limited resources to tend to this student's needs.

- **Have you made adaptations to your planning and teaching program to include the needs of students with visual impairments? Provide an example**

All participants agreed that they have made adaptations. One mentioned that in the classes provided the focus is more in listening and speaking activities rather than reading and using visual aids as activities. A teacher expressed that yes; the teacher has adapted the teaching program by adding silicon borders in the pictures to add relief, so the student knows the shape of the things discussed in class by touching them. Other teacher expressed that the adaptations are done along the way; the use of texture aids the teacher to create material or sometimes puzzles made out of foam to represent some system that they might be studying**.**

- **Have you provided individualized instruction for students with visual impairments? Provide an example**

The participants answered that yes, they do provide individualize instruction, however they do not know to what extent it is correct. A teacher expressed that when exams or quizzes are being taken the student has the teacher's total attention to read everything. Other mentioned that whilst other students try to recreate a traditional painting

from the board, the visually impaired student will listen to an audio (my voice) describing the painting, and then will choose foam sheet cutouts and paste them on cardboard to make a self-representation. On the other hand, a teacher expressed that by not providing the same lengthy lessons or coursework they provide individualized instruction. The teacher expressed that since the concepts studied sometimes are abstract the student ends up just memorizing the definition but not understanding it, but the teacher tries to carry out safe experiments in which the student can learn through the senses what the other learned by reading or assuming.

ANALYSIS OF THE OPEN ENDED QUESTIONS

- In the institution there are students with special needs such as autism, hyperactivity, Asperger, dyslexia, short term memory and physical or sensorial impairments.
- Some teachers think that the visually impaired student's needs are not being met whilst others think they are but it is difficult to do so.
- The positive factors of being a teacher of a visually impaired student is that it challenges them to rethink classes and in this way providing meaningful learning opportunities for everyone involved.
- The challenges faced by teachers of visually impaired students are mainly related to the lack of training and resources, time constrains and class distribution.
- The teachers adapt their planning to meet the needs of the visually impaired student.
- The teacher uses activities that enhance the visually impaired student senses.
- Teachers of students with visual impairment provide individualized instruction during the different activities planned for the class in order for the student to be able to complete the tasks.

PART 2

ANALYSIS OF QUANTITATIVE EVIDENCE

For the analysis of the results, a numeric scale was provided. The scale is presented below. The scale set was from 1 to 4.

The numeric scale represented the following parameters:

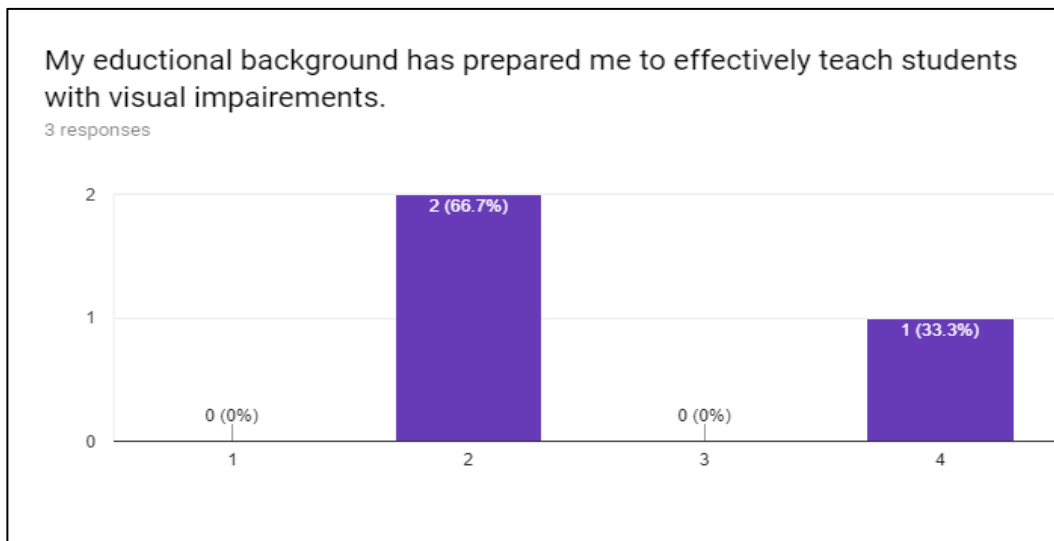1= Strongly Disagree 2= Disagree 3= Agree 4= Strongly Agree.

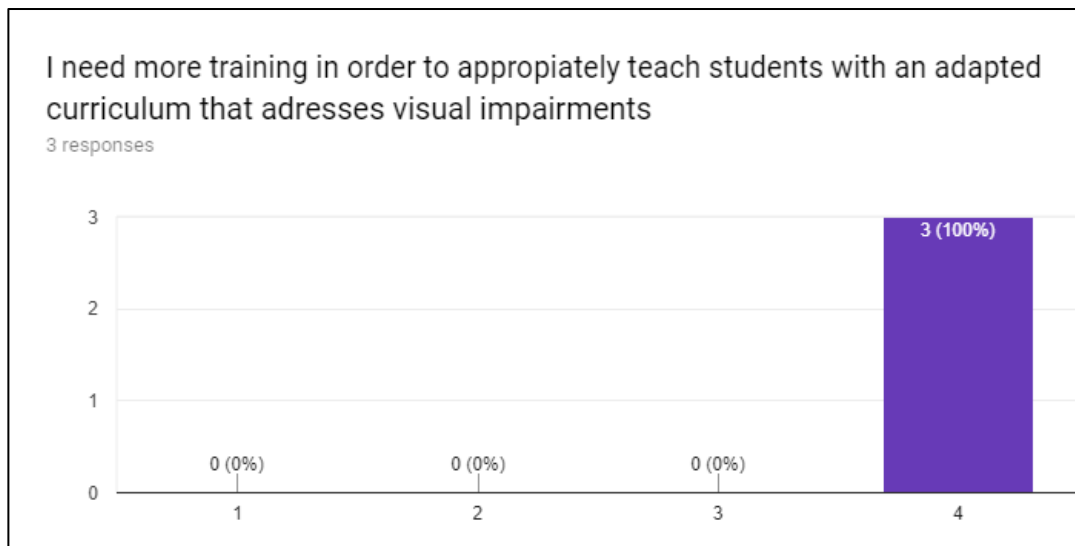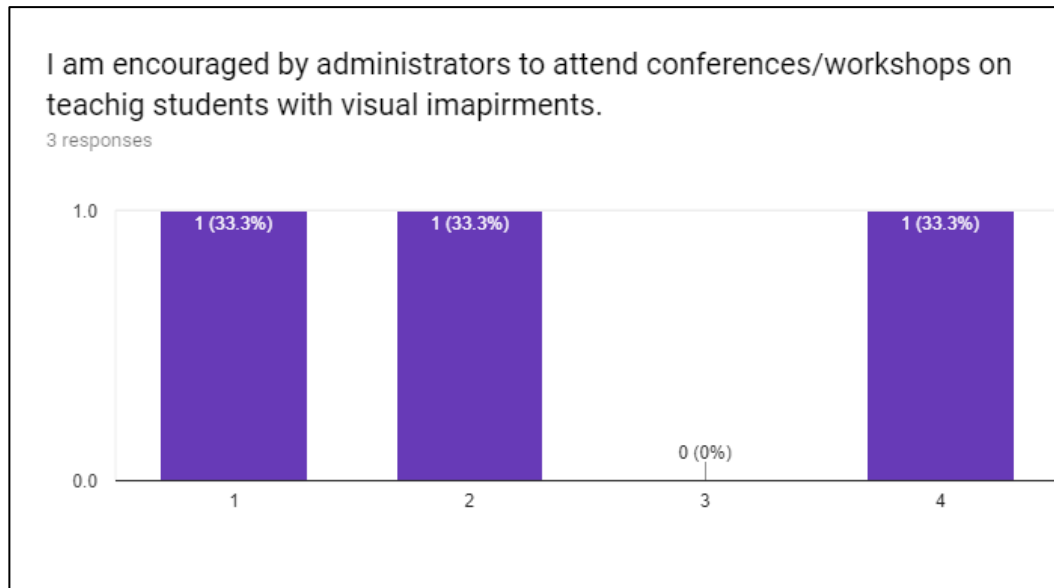*Figure 5. Based on survey applied to tecahers of visually impaired students.*

Figure 6. Based on survey applied to tecahers of visually impaired students.

According to Figure 5 the 66.7% percent of the interviewees express that their educational background has not prepared them to effectively teach students with visually impairment. In Figure 6, the participants express that more

training is needed in order to implement an adapted curriculum that meets the visually impaired student's needs.

Figure 7. Based on survey applied to tecahers of visually impaired students.
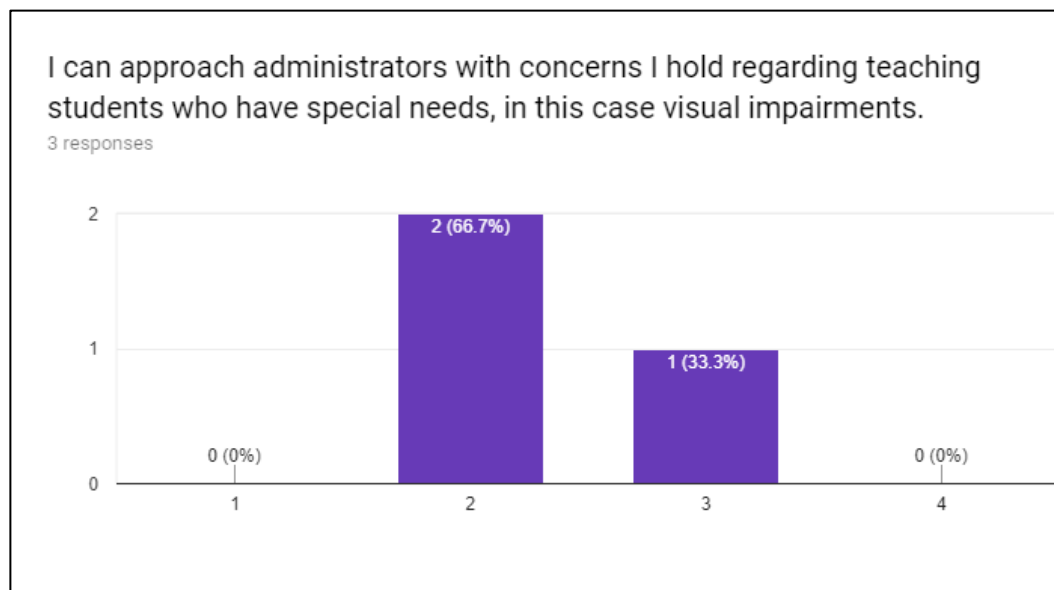

Figure 8. Based on survey applied to tecahers of visually impaired students.

Figure 7 above shows mixed opinions regarding teacher training which expresses that most teachers are not encouraged to attend conferences or workshops that will help aid the inclusion of visually impaired student's. The efforts to train all the teachers of the visually impaired students are not being met equally.

40

A 66.7% of the interviewees expressed the lack of openness to approach administrators when in doubt as of how to teach students with visual impairments.
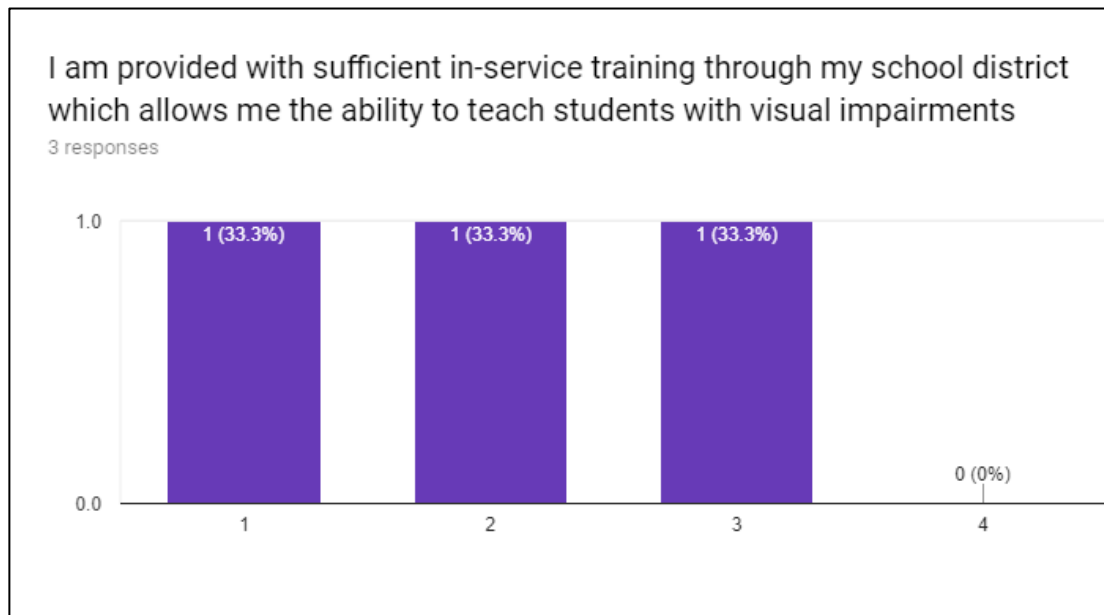

I am provided with sufficient in-service training through my school district which allows me the ability to teach students with visual impairments
3 responses

Figure 9. Based on survey applied to tecahers of visually impaired students.

My administrators provide me with sufficient support when I have students with curricular adaptations in my classroom.
3 responses
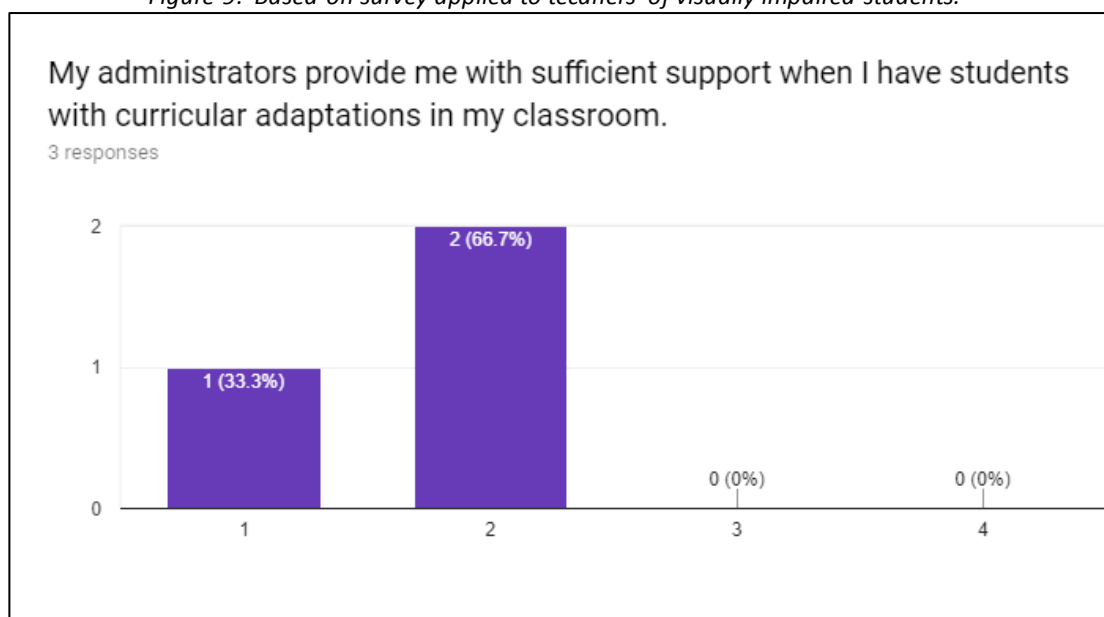
Figure 10. Based on survey applied to tecahers of visually impaired students.

Figure 9 shows a 66.6% of the interviewees disagree that they have been provided training by their school district regarding the needs of visually impaired students.

Figure 10 represents with a 66,7% that teachers disagree that their administrators provide enough support to deal with students with curricular adaptations in the classroom.

CONCLUSIONS

In general, upon the analysis of the different methods of data recollection applied such as interview and survey. It can be concluded that:

1. The main challenges faced by the teachers in this institution is the lack of proper training regarding the adaptations or modifications to be implemented to meet the needs of the visually impaired student. The Teachers are also in need of materials and tools that help the task of adapting materials.

2. The English teachers at "Escuela de Educación Básica Particular Liceo Panamericano Centenario" do adapt their classes and lessons which is a requirement of Ecuador's Ministry of Education. However, they are not sure if the adapted classes and lessons meet all the needs of the visually impaired student accordingly.

3. English teachers at "Escuela de Educación Básica Particular Liceo Panamericano Centenario" do not have any sort of proper training on how to adapt classroom tasks, homework or assessment as well as on how to grade them.

4. As it was evidence it is difficult to teach visually impaired children since the adaptations to be made must take into consideration several aspects of language learning that we take as granted with regular students. It is not every day that a teacher must think of the student imagination limitations when trying to explain abstract concepts or when describing an object by its physical properties.

5. The administrators and school district in charge of providing or scheduling training for the teachers do not encourage or provide said training to the teachers of the visually impaired students.

6. Administrators are not approachable and provide not enough support to teachers when dealing with students with special needs or visual impairments.

7. The adaptations provided to the visually impaired students by the teachers try to meet the students' needs but lack meaningful and stimulating learning activities.

8. The visually impaired students strengths and weaknesses should be taken into consideration when adapting material, classes, tasks and educational curriculum.

9. The limitations of this research where that it is yet to be researched the extent to which visually impaired students are able to learn English. However, the study has shed light into the necessity of proper and specialized training which is the basis for the education of these individuals.

RECOMMENDATIONS

It is expected that this research will serve as a base for future studies on the topic of Teaching English to visually impaired students.

It is recommended that the Institution seeks ways to effectively train the personnel involved in the student learning process, so a complete inclusive education of the student is reached.

It is advisable to contact the school district inclusion Support Units set up by the Ecuadorian Ministry of Education that have as an objective strengthening specialized and inclusive educational institutions. These units guarantee access, permanence, effective participation and learning of children and young people with special educational needs associated or not with disability.

It is recommended for the institution to visit and meet with specialized teachers at the Support Center for the visually impaired named "Cuatro de Enero". The aforementioned institution provides institutional or community care and rehabilitation programs for the individuals with visual needs, and training to teachers who are faced with the challenge to teach the visually impaired.

The institution should acquire the appropriate tools to help the teachers adapt material efficiently and ease the learning process of the student. There is technology that can be purchased to aid the visual arts learning, since arts is a highly visual subject taught at this institution. It is recommended the use of at least the Drawing boards, the DRAFTSMAN Tactile Drawing Board Tool or the inTACT Sketchpad, both devices allow the student to use them to create their own tactual graphics and feel the raised lines that appear on the surface. For other subjects, the use of the reading screen software JAWS v4.01 is suggested, so some activities can be read by the software enabling the teacher to carry out simultaneously the classes without stopping or sparing time at a free moment in class to really aid the student.

Other technology that could be used to aid the student receive proper adapted material for all the subjects could be a Braille Printer, in this way providing adapted coursework material would be more efficiently and less time consuming.

For special material to be adapted in the future, it is suggested implementing 3D printing techniques. There are several open source sites that provide designs developed by others ready to print. These open source websites such as Thingiverse, Touch Mapper, Tinkercad do not limit the teacher, they can change the design according to the needs of the student. Nowadays 3D printing is a more accessible and affordable technology.

If the institution would like to implement low cost or carry out a "Do it Yourself" approach to adapting material or implementing adaptations; the resources provided bellow are of great help.

If the teacher has just been recently recruited and has no experience with the braille alphabet and language a way to help the teacher whilst training is set up or scheduled is to use the following website, **BrailleTranslator.org** (See Appendix)

This option is a temporary and accessible solution since the teacher can use the output text as a guide to adapt the written material provided to the students, proper training is still required.

If the school does not have the appropriate resources to tend to the needs of the students, such as embossing machines or the Perkins machine teachers could use thick carboard and use a pointy surface to create the sentences in braille or use high relief techniques using silicone glue or texturized material such as wool.

It is suggested for teachers to be more creative, they could use a cork board and use different pins or buttons to recreate a sentence or instruction.

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APPENDIXES

Appendix 1: Interview

Interview with Teacher (General Ed and Special Ed if inclusive setting)	
Classroom teacher(s): **A. V.**	School: **Liceo Panamericano Centenario**
Observer: **Andrea Defaz**	Date: **20/07/2018**

Total # of students: ___30_ Age range of students: **10 - 11** Number of students who are deaf-blind: **1** Number of assistants: ____0____

Type of classroom (check one): __x_ Inclusive ___ Resource room ___ Self-contained ___ Other (please describe):

This classroom serves students with (check all that apply):

___ Physical impairments ___ Cognitive impairments ___ Behavioral Disorders _x_ Sensory Impairments

What are the student's strengths and weaknesses?

What are the student's STRENGTHS?

(1): Independence

(2): friendliness

(3): space awareness

(4): _____

(5): _____

How have you used the student's strengths in planning for his/her educational program?

Yes, the student is very good at working in groups

What are the student's WEAKNESSES?
(1): Moodiness
(2): Short attention Span
(3): _____
(4): _____
(5): _____

How have you used the student's weaknesses in planning for his/her educational program?

Not really because it's something that varies, the student weaknesses do not appear regularly

In what ways is the student included in the general education curriculum?

the student provided the same level of English classes as her classmates. English at the school is taught through readings and activities, she has access to the online platform and she is given oral instructions to answer in braille.

In what ways does the student interact with same age peers?
The student asks for help to reach for something, ask if a classmate can help them getting to the bathroom or engages in normal everyday banter with them.

How do you provide follow up to the student's activities?

I often go to the student's desk and provide instructions and check what is being written in brille eventhough is a little difficult beacuse I'm not proficient in braille.

How do you grade the student's performance?

The same as any others. However, the tasks for the students are something like answering questions. The tasks do not include visual stimuli like matching or associating images with words.

Do you provide adapted material to the student? If so: what kind? If not: Why not?

Not really because there is a lack of time and training. I would if I had the technology but using an old system such as the Perkins Braille machine is a waste of time and also because there is only one in the institution

what kind of activities do you implement in the classroom to meet the VI student needs?

I try to do vocabulary search in which the student will use the sense of smell to find the matching item but since the classroom is a numerous one it's difficult to control the students and interact with the VI student appropriately.

Interview with Teacher (General Ed and Special Ed if inclusive setting)	
Classroom teacher(s): **A. B.**	School: **Liceo Panamericano Centenario**
Observer: **Andrea Defaz**	Date: **23/07/2018**

Total # of students: ___**30**_ Age range of students: **10 - 11** Number of students who are deaf-blind: **1** Number of assistants: ___**0**___

Type of classroom (check one): __**x**_ Inclusive ___ Resource room ___ Self-contained ___ Other (please describe):

This classroom serves students with (check all that apply):

___ Physical impairments ___ Cognitive impairments ___ Behavioral Disorders _**x**_ Sensory Impairments

What are the student's strengths and weaknesses?

What are the student's STRENGTHS?

(1): Proactive

(2): Enthusiastic

(3): Friendly

(4): Independent

(5): _____

How have you used the student's strengths in planning for his/her educational program?

I use her friendliness and enthusiasm to pair her with students that will encourage her to try and do her best.

What are the student's WEAKNESSES?

(1): Stubborn

(2): Undisciplined

(3): talkative

(4): _____

(5): _____

How have you used the student's weaknesses in planning for his/her educational program?

I use her talkativeness as a way to get her to participate and explain the processes she's carried to develop an art piece or something.

In what ways is the student included in the general education curriculum?

The student has an audio book that makes up for the physical book that she doesn't have, however since the subject I give to the student is art there are certain tasks like painting and drawing that can't be developed properly because there are not appropriate tools for her to use.

In what ways does the student interact with same age peers?

She carries out almost the same activities but some of the materials are adapted, for example texturized paint or high relief activities.

How do you provide follow up to the student's activities?

I get aid by the student's mother, I grade the student's technique progress but not the overall painting or drawing.

How do you grade the student's performance?

I grade the progress of the technique or effort not the final product since the student cannot appreciate the final product.

Do you provide adapted material to the student? If so: what kind? If not: Why not?

Sometimes I provide high relief stencils or texturized materials

what kind of activities do you implement in the classroom to meet the VI student needs?

Group work or pair work, I cannot let the student alone because I percieve that the student performs better with somebody acting as a guide.

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Interview with Teacher (General Ed and Special Ed if inclusive setting)	
Classroom teacher(s): A. D.	School: **Liceo Panamericano Centenario**
Observer: **Andrea Defaz**	Date: **24/07/2018**

Total # of students: ___30_ Age range of students: **10 - 11** Number of students who are deaf-blind: **1** Number of assistants: ___0___

Type of classroom (check one): __x_ Inclusive ___ Resource room ___ Self-contained ___ Other (please describe):

This classroom serves students with (check all that apply):

___ Physical impairments ___ Cognitive impairments ___ Behavioral Disorders _x_ Sensory Impairments

What are the student's strengths and weaknesses?

What are the student's STRENGTHS?

(1): **Independent**
(2): **Friendly**
(3): **Straightforward**
(4): **Enthusiastic**
(5): _____

How have you used the student's strengths in planning for his/her educational program?

I use it when I plan groupwork or experiments because the student is always enthusiastic for those activities

What are the student's WEAKNESSES?
(1): Blunt
(2): Indifferent
(3): Complaining
(4): _____
(5): _____

How have you used the student's weaknesses in planning for his/her educational program?

Sometimes because the student is overworked after the other classes are over, so the complaining begins, I usually provide some braille adapted material.

In what ways is the student included in the general education curriculum?

The student receives the same education but it defers that they recieve resumed braille concepts, so they don't have to over things that are fillers in the book

In what ways does the student interact with same age peers?

The student interacts in a normal way by playing , answering questions and not letting anyone bother or pick on tem.

How do you provide follow up to the student's activities?

I rarely do, if it's not in class I cannot do it, I don't know braille, I haven't been trained and I don't know how to adapt material besides for the one used in the classroom

How do you grade the student's performance?

I only grade the student in the test and Quizzes, based on what the knowledge, the assessment is objective

Do you provide adapted material to the student? If so: what kind? If not: Why not?

Sometimes I do, I use textures to represent certain objects. However, I cannot do it often because it's time consuming and I have more students to tend to, also I am not provided with the materials or training to meet the needs of the student.

what kind of activities do you implement in the classroom to meet the VI student needs?

I implement pair work, and high relief or texturized examples when available.

Appendix 2. Surveys

PART 1

Read the questions bellow and provide a brief answer

Email address *

avintimilla@liceopanamericano.edu.ec

Do you have students with special needs in your classroom?

Yes, four with different problems

What kind of special needs do they have?

Asperger, blindness, immaturity, hyperactivity

Do you think that the needs of the children with visual impairment are met in your classroom?

Yes, of course. But it's difficult

What positive factors do you see by being a teacher with visually impaired students?

Challenges in adapting, learning Braille

What do you see as obstacles to fulfill your role as a teacher with visually impaired students?

Time, number of atudents, charactics of the surrounding group

Have you made adaptations to your planning and teaching program to include the needs of students with visual impairements? Provide an example

Yes, taking out the readings and visual aids to focus more on listeng and speaking activities

Have you provided individualized instruction for students with visual impairments? Provide an example

Yes. Usually when exams are taken ,she has my total attention to read everything

PART TWO

Complete the following scale by choosing the appropiate response to your belief. Use the following key to determine your answer.
1= Strongly Disagree
2= DIsagree
3= Agree
4= Strongly Agree

My eductional background has prepared me to effectively teach students with visual impairements.

1	2	3	4
○	◉	○	○

I need more training in order to appropiately teach students with an adapted curriculum that adresses visual impairments

1	2	3	4
○	○	○	◉

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I am encouraged by administrators to attend conferences/workshops on teachig students with visual imapirments.

1	2	3	4
◉	○	○	○

I can approach administrators with concerns I hold regarding teaching students who have special needs, in this case visual impairments.

1	2	3	4
○	◉	○	○

I am provided with sufficient in-service training through my school district which allows me the ability to teach students with visual impairments

1	2	3	4
◉	○	○	○

My administrators provide me with sufficient support when I have students with curricular adaptations in my classroom.

1	2	3	4
◉	○	○	○

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PART 1

Read the questions bellow and provide a brief answer

Email address *

alexa.brito.g@hotmail.com

Do you have students with special needs in your classroom?

Yes, I do.

What kind of special needs do they have?

They have different types of special needs, but most of them have developmental disabilities, like autism, dyslexia or short term memory. I have two cases with physical needs and one case of a sensory impaired girl.

Do you think that the needs of the children with visual impairment are met in your classroom?

I think that, in my case, these children's needs are not met in my class, since I'm a Visual Arts teacher. I try to induce aesthetic production from their perspective based in sounds and tactile stimulus.

What positive factors do you see by being a teacher with visually impaired students?

Thinking in how to translate a painting into a sound or a sensorial game, most of the time ends up bringing out very entertaining classes, and students really enjoy this, so I think that having a visual impaired student is positive because it challenges me, as a teacher, to create lessons far from traditional. And students having fun will always want to learn.

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What do you see as obstacles to fulfill your role as a teacher with visually impaired students?

The most relevant obstacle is always the number of kids with special needs other than the visually impaired student in a class. If there are several children with special needs in a class, it's almost impossible to fulfill your duty as a teacher. The production of didactic material to work with visually impaired students demands a lot of time, and having also other kids with special needs to fulfill won't give you the time to develop it.

Have you made adaptations to your planning and teaching program to include the needs of students with visual impairements? Provide an example

Yes, I have. I adapted the text we use with silicon borders in the pictures to add relief, so the student knows the shape of the things discussed in class by touching them.

Have you provided individualized instruction for students with visual impairments? Provide an example

Yes, I have. When other students have to copy a representation of a traditional painting from the board, the visually impaired student will listen to an audio (my voice) describing the painting, and then will choose foam sheet cutouts and paste them on cardboard to make a self representation.

PART TWO

Complete the following scale by choosing the appropiate response to your belief. Use the following key to determine your answer.
1= Strongly Disagree
2= DIsagree
3= Agree
4= Strongly Agree

My eductional background has prepared me to effectively teach students with visual impairements.

1	2	3	4
○	○	○	◉

I need more training in order to appropiately teach students with an adapted curriculum that adresses visual impairments

1	2	3	4
○	○	○	◉

I am encouraged by administrators to attend conferences/workshops on teachig students with visual imapirments.

1	2	3	4
○	○	○	◉

I can approach administrators with concerns I hold regarding teaching students who have special needs, in this case visual impairments.

1	2	3	4
○	○	◉	○

I am provided with sufficient in-service training through my school district which allows me the ability to teach students with visual impairments

1	2	3	4
○	○	◉	○

My administrators provide me with sufficient support when I have students with curricular adaptations in my classroom.

1	2	3	4
○	◉	○	○

PART 1

Read the questions bellow and provide a brief answer

Email address *

adefaz@liceopanamericano.edu.ec

Do you have students with special needs in your classroom?

yes I have

What kind of special needs do they have?

they have visaul impairements, Hyperactivity, autism and other cases

Do you think that the needs of the children with visual impairment are met in your classroom?

no, I don't think so because its a classroom with a large number of students that have very disruptive behaviours that stunned the visually impaired student to get the help or attention required.

What positive factors do you see by being a teacher with visually impaired students?

You learn to rethink your classes to meet the needs of the student. You learn to not expect the student to imagine or associate something with a previous experience that they ight not have had

What do you see as obstacles to fulfill your role as a teacher with visually impaired students?

lack of propper training and resources. I've never been trained to meet the needs of the visually impaired student and there is only one Perkins Braille machine that is for the use of the student, the teacher has to figure out how to adapt the material on their own.

Have you made adaptations to your planning and teaching program to include the needs of students with visual impairements? Provide an example

I have made adaptation along tbhe way but not before the school year has started. When with the class we were studying the organs and the systems I bought foamix puzzle of the systems for her to play and learn to recogize the organs or the order in which they belong.

Have you provided individualized instruction for students with visual impairments? Provide an example

I think I have beacuse I dont give to the student the same lenghty lessons as the others because sometimes the concepts are abstract and hard to grast so at the end its just memorizing and not real learning at all. In teh scientific process I omited the words of Observation because it is something she cant do but i made sure to carryout a safe experiment in which seh could be invoved.

PART TWO

Complete the following scale by choosing the appropiate response to your belief. Use the following key to determine your answer.
1= Strongly Disagree
2= DIsagree
3= Agree
4= Strongly Agree

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My eductional background has prepared me to effectively teach students with visual impairements.

	1	2	3	4
	○	◉	○	○

I need more training in order to appropiately teach students with an adapted curriculum that adresses visual impairments

	1	2	3	4
	○	○	○	◉

I am encouraged by administrators to attend conferences/workshops on teachig students with visual imapirments.

	1	2	3	4
	○	◉	○	○

I can approach administrators with concerns I hold regarding teaching students who have special needs, in this case visual impairments.

	1	2	3	4
	○	◉	○	○

I am provided with sufficient in-service training through my school district which allows me the ability to teach students with visual impairments

	1	2	3	4
	○	◉	○	○

65

My administrators provide me with sufficient support when I have students with curricular adaptations in my classroom.

1	2	3	4
○	◉	○	○

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BrailleTranslator.org: Is a website that offers to translate text into braille. The languages supported are English, Spanish, French, Czech and Unified English Braille Code. It offers contracted and uncontracted braille options as an output text.

Figure 11. BrailleTranslator.org Web page

The Braille Authority of North America (2002) defines as uncontracted braille the 26 alphabet characters plus two punctuation symbols, the period (.) and the comma (,). Whereas, contracted Braille is the uncontracted braille code but with 189 additional contractions and short-form words.

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**SOLICITUD DE PERMISO PARA
REALIZAR INVESTIGACIÓN**

Con motivos de mi trabajo de titulación que sigo en la Universidad Católica Santiago de Guayaquil, me encuentro realizando la investigación titulada: Teaching English as a foreign language to a visually impaired student at "Escuela de Educación Básica particular Liceo Panamericano Centenario" Para la cual necesito recabar información dentro de su institución una recolección de datos de los docentes de Inglés del sexto año de educación básica A.

Este incluye una entrevista y una encuesta a los docentes de Language Arts, Art y Science.

Le agradezco de antemano su tiempo y su amable atención a la presente, me despido de usted,

Atentamente,

Defaz Moreno Andrea Michelle,
Estudiante de Lengua Inglesa, UCSG

Guayaquil, 19 de julio del 2018

Autorizo a Defaz Moreno Andrea Michelle a realizar la investigación antes descrita en el Plantel Educativo a mi cargo.

Institución: _Liceo Panamericano Centenario_

Autoridad: _Mgs. María Auxiliadora Velarde Cevallos_

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DECLARACIÓN Y AUTORIZACIÓN

Yo, **Defaz Moreno Andrea Michelle** con C.C: **# 0951973072** autor/a del trabajo de titulación: **Teaching English as a Foreign Language to a Visually Impaired student at "Escuela de Educación Básica particular Liceo Panamericano Centenario"** previo a la obtención del título de **Licenciada en Lengua Inglesa** en la Universidad Católica de Santiago de Guayaquil.

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RESUMEN/ABSTRACT

This research paper has as an aim to explore the needs of a visually impaired student EFL skills acquisition at "Escuela de Educación Básica particular Liceo Panamericano Centenario". The study will provide teachers some suggestions on how to develop adapted material for the English classes through the use of assistive technology and offer the institution key points as to how train teachers properly on inclusive education, in this case for the visually impaired individuals.

The data was collected through interviews and surveys, it was applied to three English teachers of a visually impaired student at the aforementioned institution. The findings provide important evidence as to what is failing in the institution regarding the correct implementation of adapted material in this subject. Recommendations where provided on what assistive technology the institution should acquire to properly aid the teachers and enhance the learning environment of the visually impaired student. Thus, providing a background for any further research to be made on the topic of visual impairment and second language acquisition, materials, adaptations, modifications or techniques to have successful outcomes as results.

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