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VISUAL AIDS SUPPORTING VOCABULARY LEARNING

An Inclusive English Classroom Proposal for Students with Hearing Impairments

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Abstract

This Collaborative Action Research study analysed the extent to which learning activities, assisted by visual aids, might promote the learning of basic daily English vocabulary in students with hearing impairments. This project was designed to provide them with the opportunity to come into contact with English language in the inclusive educational framework. The participants were twenty students who belonged to sixth, seventh, eighth or ninth grade, aged between 12 and 17 years old in the San Carlos public school located in the south of Bogota, Colombia. Data were collected through a video-recorded interview to the students, tests, most of them designed with Hot Potatoes applications, and field notes. The pedagogical implementation was developed during nine weeks, time in which the students participated in twelve face-to-face sessions. Each one of the lessons was supported by the use of technological tools such as projector, computers and, among others. Throughout the data analysis process, it was possible to demonstrate that the provision of a learning environment with visual aids and the use of technological tools contributed to the learning of basic English vocabulary and also that the use of visual aids when participants learnt English promoted higher intrinsic motivation which is an essential aspect when learning any language. The study provides methodological elements that contribute to the teaching and learning approaches of English as a foreign language, framed upon inclusive education actions in our country.

Key words: students with hearing impairments, visual aids, public school, inclusive education.

Resumen

Este estudio de investigación acción colaborativa analizó el grado en que el uso de actividades mediadas por ayudas visuales pudo promover el aprendizaje de vocabulario básico en Inglés en la población sorda. Este proyecto surge a partir de la necesidad de brindar a los estudiantes con discapacidad auditiva la oportunidad de estar en contacto con el Inglés como lengua extranjera en el marco de una educación inclusiva. Los participantes fueron veinte estudiantes con barreras auditivas de los grados sexto, séptimo, octavo y noveno, con edades entre los 12 y 17 años, pertenecientes al colegio público San Carlos ubicado en el sur de Bogotá, Colombia. Los instrumentos usados para recolectar la información fueron: una entrevista grabada en vídeo hecha a los estudiantes con barreras auditivas, un examen escrito a mitad y al final del proceso, pruebas de conocimiento, la mayoría de ellas diseñadas con algunas de las aplicaciones de software Hot Potatoes y notas de campo. Durante la fase de intervención pedagógica, implementada durante nueve semanas, los estudiantes participaron en doce sesiones presenciales. Cada una de las lecciones fue apoyada por el uso de herramientas tecnologicas tales como projector , computadores entre otros.Por medio del análisis de los datos recolectados fue posible determinar que las ayudas visuales y las herramientas tecnológicas contribuyen al aprendizaje de vocabulario básico en Inglés. Adicionalmente, el uso de dichos recursos promovió la motivación intrínseca, aspecto esencial en el aprendizaje de una lengua. Este estudio proporciona elementos metodológicos que ayudan a la conceptualización de los enfoques de enseñanza-aprendizaje del Inglés como idioma extranjero, en el marco de las acciones que propenden por una educación inclusiva en nuestro país.

Palabras clave: estudiantes con discapacidad auditiva, ayudas visuales, escuela pública, educación inclusiva.

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Chapter 1: Introduction

1.1   Introduction to the study

Since 1994 with article 73 of Law 115 (National Educational Law), every educational institution in Colombia has the right and duty of designing a document called PEI (Proyecto Educativo Institucional by its Spanish acronym; Institutional Educational Project in English). This document defines the way in which the institution has decided to attain the educational goals established by the law, considering the social, economical, and cultural conditions of the context where it is located. Likewise, since 1996 with Decree 2082, the Ministerio de Educación Nacional (MEN) has established that the education for "people with physical and/or cognitive impairments and attitudinal and/or environmental barriers that hinder their full and effective participation in society on an equal basis with others" (United Nations, 2006) must be provided under the same principles of Law 115 as part of an inclusive educational program.

According to the Ministerio de Educación Nacional de Colombia (2007), in order to promote inclusive education, institutions must adapt the pedagogical practices and support SEN students (NEE-Necesidades Educativas Especiales by its Spanish acronym;SEN-Special Educational Needs in English) who are in risk of being excluded. This can be done by considering pertinent and flexible pedagogical practices that value diversity, regardless of the individuals' disabilities and which allow them to learn collaboratively and develop their basic skills.

This process of inclusion has been partially attained at San Carlos school, a public institution located in the south of Bogota with a population of 35 students with hearing impairment. These learners are included in mainstream classrooms from sixth to eleventh grades, sharing most of the lessons established in the institutional syllabus with their regular peers

(students who hear and speak Spanish) and supported by the services of a Colombian Sign Language interpreter. The whole group of students with hearing impairment do not take English or Spanish classes; instead, they receive Colombian Sign Language and Written Spanish as their first and second languages, respectively.

1.2 Rationale of the study

1.2.1 Needs analysis and problem statement

After applying a needs analysis survey (Appendix A) to get the students' perceptions about their interest in learning basic English vocabulary and a needs analysis questionnaire (Appendix B), which was designed considering that students with hearing impairment are primarily visual learners due to their physical impairment (Lane, Hoffmeinster&Bahan, 1996; Nover& Andrews, 1998; Reves, Wollenhaupt&Caccamise, 1995), to measure their current language level, the researchers identified the students' interest to participate in this project, as well as their lack of knowledge about the language. Other aspects that arose from the needs analysis were students' preference for using images to develop their academic assignments, the insights about the way they react to visual aids used in the classroom and as part of their homework.

This research study emerged as a response to the lack of access of a group of students with hearing impairment to the English lessons in the school, in conformity with Decree 34 of 1980 of Ministerio de Educación Nacional, because their physical impairment might become a barrier for the language learning process in a regular classroom. Thus, the analysis of the survey gave basis to carry out this action research study since students expressed their desire to learn English andrecognized its importance in their academic and labour fields where they could use it. On the other hand, the information gathered from the questionnaire allowed the researchers to

establish a starting point and define what kind of information and activities supported on visual and technological tools might be designed to make a first approach to the English language.

1.2.2   Justification of problem' significance

Learning English as a foreign language has become a challenge and a necessity in Colombia, prompting the Ministerio de EducaciónNacional to invest a large number of resources for students and teachers to achieve an English intermediate level of proficiency. However, English subject is not included in students with hearing impairment curriculum at IED San Carlos school and they do not have a regular room or an assigned time to learn English as a foreign language. In other words, the school does not offer an education program to deal with their EFL learning needs and they cannot have the possibility to explore the great bulk of knowledge and information available in this language. So, in the future, they might not have access to the same professional opportunities as their hearing peers.

Considering the information gathered during the needs analysis stage, it was decided to start a research study with the aim of designing and carrying out a methodological proposal to provide a group of 20 sixth to ninth graders, between 14 to 17 years old, with the opportunity to start an English literacy process through the learning of basic vocabulary and simple short sentences using visual aids as a support of their overall learning process. Thus, this study is significant for learners with hearing impairment because they may undertake the challenge of learning a foreign language, and it is also useful for teachers who can get methodological tips related to work with this population.

1.2.3   Strategy selected to address problem

The use of visual aids and teaching techniques based on students with hearing impairment needs and learning preferences were selected as the strategy to approach this group of students to

EFL. Berent and Clymer (2007) claim that "deaf and hard of hearing students are a special language learning population from whom visually oriented educational technologies can play a critical role in providing compensatory spoken language input" (p.2). The technological tools available nowadays offer different alternatives to students with different learning styles and in this case with a hearing impairment to develop an amount of activities and information through different channels (for instance, visual, kinesthetic). Thus, students with hearing impairments can learn, perceive and understand information with the support of well organized material that can attend their particular learning conditions. The participants were provided with visual aids as a support in their process of learning basic vocabulary, which in turn might have benefited their lexicon acquisition and boosted their levels of intrinsic motivation, promoting their understanding and participation in the activities proposed.

1.3   Research question and objective

The analysis of the particular situation related to students with hearing impairment, who are not involved in the English learning process, and the proposal of a pedagogical intervention are addressed to answer this research question: *To what extent can learning activities assisted by visual aids promote the learning of basic daily English vocabulary in students with hearing impairments in a Colombian public school?*

Established the research question, the following research objectives were considered:

General objective:

•   To determine the effects (if any) of the implementation of learning activities assisted by visual aids to promote the learning of basic daily English vocabulary in students with hearing impairments in a public institution.

Specific objectives:

• To describe the process that students with hearing impairments go through when learning basic daily vocabulary in English by means of learning activities assisted by visual aids and technological tools.

• To identify the factors related to intrinsic motivation that students with hearing impairments display in the development of EFL learning activities.

1.4   Conclusion

In this study, having the time to reflect upon the concept of inclusive education, English learning became the stepping stone to offer a population with a hearing impairment equal present and future educational scopes. In this sense, the physical limitation served as the opportunity to use methodological and teaching strategies which could suit students with hearing impairment learning needs and preferences, responding to their hearing limitation and their lack of knowledge on the language.

It is evident that all studentsneed to learn English in a globalized world where this language has become pivotal for having better quality of life. As other studies have shown, the use of visual aids to promote English learning, can work as a channel to cope with the ways population with hearing impairments receives information, acknowledging the visual characteristics of their first language (sign language).Furthermore, the visual aids were used to promote the development of basic thinking skills, necessary to foster more complex ones, considering the fact that the process may continue or may be extrapolated to other subjects.

For this reason, it is essential to review other studies related to the topic, specially those ones which are based on the use of visual aids to promote vocabulary learning in students with hearing impairments under the perspective of English as a foreign language. This kind of

investigations provides this research study with the background and a broader perception of the

phenomenon.

Chapter 2: Theoretical Framework & State of the Art

2.1   Introduction

This chapter presents an analysis of the specific constructs and the revised literature in the field of students with hearing impairments literacy process related to inclusive education, learning vocabulary, and the use of visual aids and technological toolsas didactic resources. Additionally, previous research studies on students with hearing impairments when learning a foreign language are presented, as well as the impact that different methodological strategies have had when teaching English to this population.

2.2   Definitions

2.2.1   Students with hearing impairments literacy process in inclusive education

SEN are defined as physical, cognitive or communicative disabilities that require special educational attention. These characteristics can produce greater difficulty in regular learning processes (Cline & Frederickson, 2009) and can affect the academic performance of students, developing a clear disadvantage in relation to peers who do not exhibit any kind of impairment (MEN, Decree 366, 2009). In Colombia, this decree also regulates the organization and proper functioning of the educational support service provided to SEN students within the framework of inclusive education.Thus, this law provides educational institutions with a legal frameworkand specific parameters to be taken into account when designing and planning programs for that population.

Inclusive education is understood as the right for all students (with and without disabilities) to attend regular classes, be valued equally, deserve the same opportunities and experiences to learn together with their peers. Among the handicapping conditions, that require

inclusive education, stand sensory disabilities such hearing impairments which are defined by the

World Health Organization (2006) either as "the complete loss of ability to hear from one or both

ears" or as "the complete or partial loss of ability from one or both ears. The level of impairment

can be mild, moderate, severe or profound" (p. 9).

Eventually at Colombian schools, where inclusion processes are starting to be

understood and developed, Colombian Sign Language (CSL) is taught to students with hearing

impairments, providing the path to break learning barriers. This language has become the

channel of communication to socialize with other people with hearing impairments and with

their parents and teachers. CSL was recognized by Colombian Government as the language for

communication with the people who have not been able to develop oral language (Congreso de

Colombia, Law 982, 2005). It is a linguistic system based on the visual and manual mode of

communication; it does not have a written and phonological system, but an internal structure and

independent set of rules.

As Macurová (2005) pinpoints,"the overwhelming majority of deaf have hearing parents"

(p 31). Hence, school becomes the unique source for most of children with hearing impairments

to learn or reinforce their mother language to start their educational process and ensure their full

academic development in equal conditions as a right to effective and real equality to education

(Constitución 1991, art. 5, art. 13, art. 67). This population should be provided with fair and

equal opportunities, not because of their physical differences, but because of their human nature.

In order to assure the fulfillment of the aforementioned rights, "The Public Policy for

SEN" has been launched in Colombia and includes factors that ensure the access to the same

opportunities for everyone. Aspects such as using and enjoying all the services offered by the

State, getting access to information and education services, coping with the difference and

receiving the necessary pedagogical, technical, technological, and human support to allow

students with barriers for learning to join a social and labor environment independently, are just

some of the rights mentioned for the purpose of this investigation. The focus is to adapt the

environment that surrounds SEN people taking into account their needs. Florian (2008) states

that inclusive education deals with the right that all children have to receive education in equal

conditions, without considering physical, social or linguistic differences. In this sense, schools

have to guarantee the organization and implementation of the curriculum in order to provide

students with barriers for learning with an environment supported by tools and strategies which

avoid academic disadvantages in relation with their regular classmates.

In Bogotá, inclusion in public and private schools started in 1996, and nowadays, there

are nine state schools that are involved in this process. Taking into account students with hearing

impairments linguistic and communicative needs, different educational alternatives are offered in

elementary and secondary education at San Carlos school; in preschool and primary grades a

classroom for people with hearing impairments and in secondary school, an integrated classroom

where this population shares almost all lessons with regular students (Alcadía Mayor of Bogotá,

2004).

Students with hearing impairments take CSL lessons as their first language and written

Spanish as their second language instead of Spanish and English. Learning a foreign language is

optional (MEN, 2006) and can be attained depending on their interests and potentialities,

considering the options that each institution is willing to offer. To this respect, authors such as

Berent (2001) and Janaková (2005) assert that the lack of English knowledge hinders the

possibilities to succeed in the academic and labour life. Thus, this last statement provides the

field to develop this action research study; if the possibility to learn English is denied, students

with hearing impairments might be driven out of multiple and richer academic, social, personal and work experiences.

The process a person with hearing impairments follows to learn a foreign language may be compared to the process of learning written Spanish as a second language; indeed, the way how this population learns sign and written Spanish language might have a great influence when learning a foreign language, "the literacy skills developed in one language may be transferred to another language" (Cummins, 1981, p.29). People with hearing impairments learn written Spanish language with complex obstacles when trying to identify and use determiners, conjunctions, verbs tense, among others which are used differently in sign language. Moreover, both languages differ in many linguistic terms from sign language, considering that a sign word conveys much more meaning than a simple word (Meyer & Wells, 1996). Meadow and Mayberry (2001) claim that the major developmental hurdle children with hearing impairments face is not simply learning to speak intelligibly, but acquiring language -namely the lexicon, morphology, syntax and semantics of language. For this reason, when students with hearing impairment present some limits in this process, it is because the degree of both languages in terms of syntax differs in a considerable way.

However, there are several studies that show multiple possibilities this community has to embrace when learning English as a foreign language, having in mind their learning needs and characteristics. For instance, Meadow and Mayberry (2001) affirm that "the basic impoverishment of deafness is not lack of hearing, but lack of language" (p.29). Likewise, Macurová (2005) explains that "the factors affecting the language learning process associated with learners may be: cognitive style, learning style, motivation, attitude to target language, etc." (p.34), but not inability to learn the language. Janáková (2001) asserts that with proper training in

different strategies and skills, students with hearing impairment would gradually reach a level of foreign language skill, equal to their hearing counterparts. In this sense, it could be argued that due to the fact that students with hearing impairment at San Carlos school have not had the opportunity to attend English classes caused by the absence of resources, teachers' training or the interest from the administrative staff of the institution, this study might arise as an alternative to provide this community with enough tools to start this literacy process with the option of continuing it as a part of their life project.

Thus, from the studies mentioned, it became clear this population can participate in any learning process in similar conditions as regular learners. It is obvious that their hearing impairment will disrupt the development of skills related to listening and speaking. However, granted that enough input is provided coping with their learning characteristics and limitations, the learning outcomes will be reached. Teachers need to be aware of the multiple kinds of learning variables which can be found in a classroom. Furthermore, when the variables correspond to learners with hearing impairment who have been underestimated, the learning advances might be few and slow, but the reconnaissance as people with the same competence for learning will be long-lasting.

2.2.2 Learning vocabulary

This specific study makes reference to the learning of written English, as a foreign language for students with hearing impairment. On one hand, Bowe (1998) asserts that practically all products and services for this population are introduced by written words and by virtue of this, it is required to possess strong reading and writing skills. In the same line, learning English becomes crucial around the world for accessing to the information available via Internet and in other educational and technological sources for both, hearing and with hearing

impairments students in non-English-speaking countries (Berent, 2001). Thus, the learning environment provided for the learners was focused on the mentioned form of the language, connected to their context, making emphasis on the necessity to understand other cultures, or to get employment opportunities in the globalised society.

To get certain literacy in this language, Macurová (2005) addresses methods such as the Natural Approach and the Comprehension Approach, based on some principles of child language acquisition, in which reception precedes production. On the reception stage, vocabulary is provided as one of the first steps during the learning process, and on the production stage the process is emphasized on how learner expresses in different ways such as verbal or nonverbal communication. This study addressed the attention to the reception stage, given that the population had not received any kind of input in the target language and intending that with the provision of specific vocabulary, students were able to attain basic skills such as identification, association, and classification, which are necessary to develop other more complex processes later on.

About the process of vocabulary learning, Moats (2005) states that it is the basis and support to comprehend, to express or to interpret what we read in different settings. Thereby, students with hearing impairment need to acquire English vocabulary as a crucial stepping stone to get the meaning of the words and process the information into contextualized conditions that influence comprehension skills like communication and interactions with peers. In this sense, students can recognize the meaning of a word and use it in the most appropriate way.

Luckner and Cooke (2010) establish that the process of learning vocabulary is characterized by three main stages: first, learners do not know the word, second they need to be familiarized with new words and finally, they recognize and use them in meaningful sentences

and are able to communicate. Similarly, Dimling (2010) states that the vocabulary learning process may be evaluated bearing in mind three variables: recognition, production and, comprehension. Thus, learners with hearing impairmentare genetically equipped to acquire new languages like Spanish or another foreign language, therefore, they need to get new words as the first input phase in the communication process before going to the structuring phase of words as part their language learning process in which connectors and conjunctions, among other features of the spoken language, are set up in a different way.

Therefore, the aim of this study is to promote efficient word identification and decoding abilities for understanding processes which are described by Perfetti (1992). Pereffetti (1992) states those two aspects as part of the comprehension process which are important in word reading. An evident limitation related to the acquisition of vocabulary is given by the lack of learners' previous knowledge on the topic. In order to address this difficulty, a set of vocabulary learning strategies need to be included which may help to introduce learners into knowledge of the lexicon of a foreign language. The National Reading Panel (2000) states that when dealing with vocabulary, direct instruction for specific context, repetition, multiple exposure, rich environments, engaging activities, use of computers and the use of a variety of methods, need to be taken into account since those are some of the major components of reading.

In this sense, while learners acquire vocabulary, they may develop skills which let them identify and understand a written piece. It is important to take into consideration how the cognitive process is affected, for instance, in cases in which students with a moderate-size lexicon have evidenced better vocabulary learning process than those students with smaller ones (Garrison, Long & Dowaliby, 1997). Nevertheless, when children with hearing impairment learn sign language, their lexicon learning is a consequence of the acquisition of more words of

meaningful nature (Anderson & Reilly, 2002) and therefore, their vocabulary can continuously increase.

To conclude, vocabulary learning, as a component of reading skills, requires a set of strategies which must appraise students' needs and styles when planning, considering the different stages that it involves. Furthermore, recognizing the particularities of learners'first language enables the teacher to select the type of vocabulary they can learn progressively. This is a key aspect since starting learning from simple words to short utterances, including words that might represent a higher difficulty for learners such as linking words and prepositions, is essential to master the target language they are learning.To tackle this aspect, it would be advisable the use of high frequency words in order to increase vocabulary and familiarize students with sentence structure when attempting learners with hearing impairment to work with more complex set of words and sentences.

2.2.3   The use of visual aids for learning a foreign language

Longman dictionary of English (2001) defines visual aids as "something such as map, picture, illustration or film that help people to understand, learn, and remember information" (p.1842). Thereby, the use of visual aids has been related in educational field as a helpful tool to improve the process of learning a foreign language in the classroom; this is one of the most common methods for engaging, developing and supporting any learning process. Cronin and Myers (1997) indicate that there is a number of benefits in using materials in teaching English as support to promote better understanding and clearer teaching practices. Similarly, Canning-Wilson (2000) states that visual materials stimulate and facilitate the process of learning a foreign language. In Kaçauni's words (2014) these tools allow learners to acquire the information through an additional sensory perception.

Consequently, the use of visual aids is taken under the perspective of assisting and helping students to learn and understand basic English vocabulary studied in the classroom. When working with students with hearing impairment, teachers and learners recognize the importance of using visual materials to explain, exemplify or practice the vocabulary presented and make the process easier and understandable. They represent a source of motivation because they can change the dynamics of the traditional classes with a sufficient amount of stimuli supported by a CSL interpreter.

The term visual aids covers a variety of tools with multiple resources that help students to improve learning and interaction in the classroom. One of these tools is Power Point Presentations (PPP) as a technological application, defined by Hesier, Lonn and Mayer (2001) as an instructional tool that involves words and pictures that are intended to improve knowledge acquisition or knowledge construction. Some authors like Cliff (2008) emphasize the advantages of using this application in the educational field to optimize the learning environment in order to communicate the most important information. Likewise, this tool affects learning in a positive way when information is displayed, by means of visual representations, in a structured and meaningful way (Jones, 2003). PPP may be used to illustrate clear and consistent information by means of visual representations of knowledge in a structured and meaningful way.

Another visual aid which can be used to support the teaching-learning process of students with hearing impairment is printed material. Tomlinson explains that "this material is valuable to increase learners' knowledge and/or experience of the language" (1998, p. 2). Additionally, the contribution of printed materials such as puzzles, crosswords, lotteries, and dominoes are very significant in the acquisition and retention of new vocabulary. Bindarti, Ratnawati and Rofiq

(2012) claim that the use of crosswords and games in the classroom improves English learning and assists vocabulary achievement.

In the same line, flashcards are one of the best methods to teach vocabulary and help learners to understand a foreign language (Scrivener, 2003). They are used to make the information more attractive and appealing to learners; this kind of material can be used to introduce new vocabulary in a foreign language with the picture and the English word below it.

Additionally, in the educational field it is notorious that the use of technology has been particularly useful in the design of web material with the purpose of teaching foreign languages in real situations of communication to facilitate the process of learning. It is the case of pictures and online dictionaries which are a considerable help to find information available on the web to make the work more appealing.

For learners with hearing impairment, the combination of printed material and web materials is desirable as a source of reinforcement of the work developed in the classroom, assisted by the teacher and in collaboration of their peers, or autonomously at home. The students can devote certain amount of time making use of the web resources suggested by the teacher, at their own pace and with multiple opportunities to go back over the exercises. The materials allow the teacher and the students to take the most of them in differentiated educational settings in the classroom or at home while boosting different kinds of skills such as evaluating and selecting.

One of the visual aids that allows students to be in contact with technology and learning is Hot Potatoes which is an interactive piece of software that combines communicative skills with technology and lets teachers make interactive lessons (MacGregor&Winki, 2001). The use of Hot potatoes helps students to learn vocabulary and grammar with multiple online activities

(Chappelle & Jamieson, 2008). This software was optimal for this study since it provided a user-friendly interface to design supplementary activities for improving lexicon with the assistance of technology by letting learners make associations between a list of words or short sentences with images, videos, graphics, and links. Moreover, as Tomlinson (1998) argues, multi-media materials are usually interactive and enable learners to receive feedback on the final product, monitor their learning progress and check their answers on the programs, moreover, these help them to evaluate their learning outcomes.

Hot Potatoes is not the only software designed to assist the process of vocabulary learning; J-click, Learnclic, Viper, Classtools are other programs, and online resources that offer teachers multiple tools to design interactive exercises. The selection of the tool depends on the teacher's skills to handle it and the kind of activity he or she wants to present to the students. For this study, Hot Potatoes was selected since the teacher-researchers were familiar with its use and the activities it offers were adaptable to the sort of skills the students were expected to reach.This software was effective to reach the main aim of the present study which is offering practical and effective tools to teach vocabulary and assess students' progress.

The diverse kinds of materials provide learners with a considerable quantity of visual aids that influence the understanding of new words. As Nover and Andrews (1998) claim that many children with hearing impairments use vision to process language, thus, the tools mentioned are convenient to be implemented in the classroom in order to acquire information in a significant way and improve English lexicon.

2.3   State of the art

In the National field, there are few studies related to teaching English to students with hearing impairments. Montaño and Vera (2012) conducted a descriptive study about the

inclusion process in a public school in the south of Bogota linked to English language

classrooms. This study presented the notion that the inclusion process is impossible due to the

lack of information, communication, material, and knowledge about the topic and the absence of

specialized support. The results and conclusions based on these authors enabled researchers to

focus on the features of teaching strategies applied with students with hearing impairment for the

English learning process.One of those aspects is that if the particular students with hearing

impairment' learning conditions are considered to design appropriate material (visual aids) with

attainable learning goals for students, the inclusion process can be real.

Avila (2010) designed a blended English course offering strategies to a group of students

with hearing impairment at the Universidad Pedagógia de Colombia to deal with the information

available in a spoken language world. This study provided the opportunity to start analyzing the

process of inclusion in English language classrooms in the country, drawing attention on the

particular situation of this population who does not receive any instruction in English at school,

but have to deal with the language in other academic and professional contexts. Therefore, the

current study is a stepping stone to start involving students with hearing impairment in a process

of English literacy from lower grades, recognizing their particularities and designing material

that may be effective for their learning style.

In the international context, authors such as Berent (2001) and Janakova (2005) agree

with Avila (2010) when assert that lack of English knowledge hinders the possibilities to succeed

in the academic and labor life. The first two authors address the importance of trying new

methods and materials for teaching English as a foreign language and the second pinpoints the

need of changing the attitude towards inclusive education and applying new technologies to

integrate and update practices in the English teaching and learning process of students with

hearing impairment. Call (2006) makes reference to the valuable consequences of learning a

foreign language for a community with hearing impairments. Among others, the author includes

the improvement of cognitive and educational goals and promotion of metacognitive awareness.

Conversely, he denies the confusion that a student with hearing impairment might suffer for

learning another language, different from his/her first and second ones. Additionally, he claims

that this process boosts child self-esteem and offers examples of people with hearing

impairments who have achieved this multilingual skill. Therefore, the present study could also

clarify the fact that when approaching the learning of English, learners with hearing impairment

can reach higher levels of intrinsic motivation, since they can observe the results of using visual

aids in the process of learning vocabulary. This tool enables the participants to exhibit their

understanding of the topics when developing the proposed exercises.

Thornley (2013) explains in her research study that the use of visual aids in the process of

language learning with students with hearing impairment helped them to recognize grammar

patterns visually and be able to self-edit their grammar rules and unknown words. In addition,

Bochner and Walter (2005) point that students with hearing impairment needed the same type of

instruction in English, immersion and repetition through visual means.

Morávková (2011) carried out a research study related to the process of teaching English

to students with hearing impairment. The research took place in Brno, The Czech Republic with

a group of secondary students. Results of this study showed the motivation of students with

hearing impairment to learn a foreign language with the use of different resources like graphic

organizers, visual aids, videos, etc; andthe students' experiences such as the incomparable effort

by learning a foreign language with the use of the different visual material in their regular classes

to make a better understanding and the importance of using English in their daily life.

In addition,the research study revealed two main aspects: Firstly, the results showed that students with hearing impairment were aware of the importance of learning English for their future and considered it a vital aspect for their educational process in a globalized world. Secondly, teachers confirmed the necessity of implementing a foreign language teaching process focused on students with hearing impairments needs with the most appropriate resources for them.

Kalivodová (2013) also conducted a research study in The Czech Republic with two specific objectives; the first one related to the different types of methods based on teaching English as a foreign language for students with hearing impairment. The second one focused on English lesson observation to identify possible differences in the process of teaching English to learners with hearing impairments. In the study, the author explains that in mainstream schools,students with hearing impairment are encouraged to learn a foreign language starting from primary education with different methods; this process includes visual and spatial elements which enable them to improve their understanding of English grammar and vocabulary. This study reflects the importance of using visual material in order to promote vocabulary learning, result that is consistent with the nature of the present study.

2.4   Conclusion

The theories presented in this chapter have shown consistent arguments about the process that students with hearing impairment develop when learning basic vocabulary in a foreign language. Also, theory has demonstrated that the strategy of using visual aids for this population is an essential, helpful, and supportive resource that assists the learning process, and it is also convenient and appealing to them. Furthermore, previous studies, focused on teaching a foreign

language to students with hearing impairment, have demonstrated several benefits obtained

during the different implementations.

In the following chapter, the research design of the study will be presented.

Chapter 3: Research Design

3.1   Introduction

The following chapter includes the description of the type of research utilized in

with information of the context, participants, researchers' role, data collection

instruments and procedures as well as their design and validation. Additionally, the ethical

considerations of the study are explained. The following chart summarizes some of the aspects

 mentioned:

Table 1. Research design

Type of study	CollaborativeActionResearch (Sagor, 1992)
Researcher's role	Teacher-observer
Context	San Carlos School. Public School located in the south of Bogota
Participants	20 students with hearing impairments from sixth to ninth grades with no English knowledge.
Data collectioninstruments	Field notes Participants' survey and interview Questionnaire Hot Potatoestests
Data collectionprocedures	Pre-stage, while-stage and post-stage

3.2   Type of study

This study is collaborative action research as it allows the teacher-researchers to identify

real problematic situations inside a classroom, to reflect about their pedagogical practices and to

develop actions to improve them (Burns, 2010). Burns (1999) also affirms that collaborative

action research encourages the researchers to value their own judgments through the validation

of classroom observations. According to Sagor (1992), two conditions must be met to carry out

this type of research: (1) the phenomenon needs to be related to the teaching/learning process, and (2) teachers become involved in generating knowledge that enriches their pedagogical practice. The collaborative characteristic comes into play when the researcher finds an opportunity to change social situations as the result of group problem solving and collaboration by writing up and sharing results (Burns, 2010). In this sense, action research let researchers be involved with this specific population to understand how to carry out English learning process and how to propose theory framed upon inclusive educational actions.

The rationale of this research methodology lies on involving teachers who work together with a specific group of students (individuals with hearing impairments) in a particular setting .When working collaboratively, the study could reach a bigger range of population, benefiting a large group of students. Moreover, it is possible to share and discuss beliefs, values, and probable solutions from different perspectives, enriching analysis and final results.

3.3   Context

The research study was conducted at San Carlos school; it integrates students with hearing impairments to the regular courses. There is not a specific syllabus designed to respond to students with hearing impairments learning needs because in the curriculum of the institution they do not take English or Spanish lessons; instead, they take sign language as their first language and written Spanish classes as their second language.

The PEI is focused on the integral education in values with emphasis on Industrial Electronic and Graphic Design which is promoted by an articulation program between the school and the Universidad Escuela Colombiana de Carreras Industriales. The school's mission is to construct and to develop an educational plan that integrates regular and students with hearing impairments. It focuses on strengthening competences in communication, technology and

entrepreneurship, providing tools which allow them to improve their life quality (San Carlos School 2014-2015).

3.3.1 Participants

For the present study, thirty students with hearing impairments who belonged to the afternoon shift were invited to participate of the English class in the opposite shift, but just twenty of them started and stayed throughout the process. They were 11 males and 9 females with ages ranging from 13 to 19 years old from sixth, seventh, eighth, and ninth grades. Most of the participants had never taken English lessons formally or informally; thus, they began the process without English knowledge.

Most of their parents do not know or use the Colombian sign language; the only contact participants have had and currently have with their first language is at school. During their primary education, students with hearing impairments are included in a specific classrooms (Alcaldía Mayor de Bogotá, 2004) to acquire and/or to develop the CSL and other competences that respond to the school curriculum. However, most of the students still do not cope with the CSL properly when they reach high school, where they are included in a regular classroom and supported by an interpreter. For that reason, they face difficulties in the process of literacy at school, not only in their first language, but also in the other subjects in which written Spanish is the primary language.

This particular population was chosen based on the principles of equality and dignity, in which everybody has equal opportunities defending the right to be in a real process of inclusive education. It is suitable to add that their physical condition is not a handicap to access to a new language and although the process of learning a foreign language might be harder, it will be also more rewarding.

3.3.2   Researcher's role

Considering the type of study selected for this research, two specific roles were assumed: teacher and researcher. The former, when planning, designing, and implementing appropriate activities for the participants based on the observations, students' needs and theory revised; and the latter, when gathering and analyzing pieces of information derived from the observation process to determine if the learning activities were useful or not to achieve the study goal. The information gathered was analized to establish theory on students with hearing impairments learning process. Freeman (1998) argues that the role of a teacher is to adopt a position of researcher to establish a relation between what it is known and unknown about students, teaching and learning.

3.3.3   Ethical considerations

Ethical considerations were contemplated to guarantee confidentiality to the participants. Firstly, a consent form, clarifying the purpose of this research study and guaranteeing their identity privacy, was sent to students' parents and to the school principal (Appendix C). Students and parents were free to participate and agreed on the use that researchers could make with the data collected. Furthermore, participants' identity was protected by using numbers (for example, Student 1). Considering the participation of three teacher– researchers, permanent negotiation became an agreement that ensured greater equality, constructive discussion and avoidance of possible power differences (Burns, 1999).

3.4   Data collection instruments

The instruments used for this Collaborative Action Research include: a needs analysis survey and questionnaire, twelve field notes, twelve Hot Potatoes tests and a participants'

recorded interview. These instruments were designed considering the characteristics of the

population and the context where the implementation took place.

3.4.1   Descriptions

3.4.1.1   *Needs analysis survey and questionnaire*

The first two instruments used to gather data were a survey and a questionnaire employed

as part of the needs analysis stage, useful to gather information about students with hearing

impairments English knowledge, to identify the appropriate pedagogical strategy, as well as to

know the students' interest in the project. Making reference to the different kinds of surveys

mentioned by Cohen, Manion and Morrison (2007), the one applied was confirmatory since the

questions were addressed to verify that the chosen group of students with hearing impairments

had no English knowledge and might prefer the use of visual aids over other pedagogical

strategies suggested, considering their condition of visual learners. In this sense, this survey was

used to collect information at a particular moment to describe the nature of existing conditions

about the target population and to generate accurate instruments through the analysis of the

results. Likewise, this study used a questionnaire with a series of written sentences as a research

instrument to gain more details related to the need analysis from English level's respondents.

3.4.1.2   *Field notes*

As noted by Burns (1999), notes are a tool to document and analyze aspects that have

already been identified as the main purpose of the research. Notes also provide a picture of

classroom interactions and a view of the issues that are being analyzed in the learning and

teaching context. The author uses scribbling and jottings to make reference to the kind of notes

that a researcher takes in an informal way on the spot as the lesson proceed. Samway (1994)

points out the importance of developing one's own system to collect data from observation,

asserting that what worked for a person could not work for another. The field note taking

strategy chosen by the team of teachers-researchers (Appendix D) provided information related

to the kinds of interaction, first language support, attitudes towards the selected strategy, and the

implementation itself.

3.4.1.3   Hot potatoes tests

The progressive, midterm and final term tests (Appendices E, F, G) designed with the

assistance of the educational software Hot Potatoes offered the teacher-researchers the

opportunity to obtain quantitative data to support the information collected by the other

instruments. This tool provided students with immediate feedback and let them take the tests as

many times as possible. In addition, the tests designed with the software helped teachers-

researchers to keep track of the the students' progress throughout the pedagogical

implementation and to corroborate the validity of the educational strategy selected (visual aids).

Furthermore, this software includes six applications to create interactive online exercises and

three of them were selected: J-match, J-cloze and J-cross.

Those applicationsallow the users the development of exercises focused on recognizing,

listing, associating images in order to learn vocabulary. These actions are related to the first three

levels of the critical thinking skills based on the revised Bloom's taxonomy (Anderson

&Krathwohl, 2001), which are remembering, understanding and applying. The following levels

and actions were selected to be fostered considering students' lack of knowledge of the language.

Table 2. Set of actions used to designed the resources according to the revised Bloom's taxonomy

Level	Actions	Resource
Remembering	Recognizing, Listing, Identifying, Retrieving, Naming	Power Point Presentations at the beginning of the lesson
Understanding	Confirming, Matching, Distinguishing	Hot Potatoes activities
Applying	Classifying, Choosing, Completing, Using	Games

3.4.1.4   Recorded final interview

The last instrument applied to gather data was a video recorded interview (Appendix H) aimed to collecting more personal and reliable information about students' perceptions and opinions towards the process of learning basic vocabulary. It was designed in Spanish, applied to 20 students with the support of an interpreter, and transcribed accordingly. Cohen, Manion and Morrison (2007) assert that "interviews are used as a means of gathering information having direct bearing on the research objectives" (p. 351). Therefore, one of the purposes was to collect data to facilitate and enrich the analysis in this study.

3.4.2   Validation and piloting

The four stages of the data collection are summarized in table No.3. Each one of the tools was evaluated by a group of teacher-researchers, who provided feedback in order to refine them regarding clarity and understanding. This evaluative process was done previous to the implementation of the instruments.

Table 3. Data collection procedures

Instrument	Date
Needs analysis survey and questionnaire	March 2014
Progressive tests	September and October 2014- during 5 weeks
Mid term test	February 2015- 1 week
Field notes	During the entire process
Final interview	March 2015
Final test (Achievement test)	
On line exercises	During the entire process

The instruments and the different stages were planned to follow a systematic procedure, regarding the concepts of validity and reliability. The selection and implementation of these instruments complied with the triangulation process based on the data gathered from them and the objectives proposed, involving collective multiple sources of data.

3.5   Conclusion

Throughout this chapter the data collection instruments, the reasons for selecting them and the stage when they were administered, were explained. The description of the research design responded to the needs and features of the target population and the strategy utilised for the intervention allowed the researchers to find data that supported the main objective of the research. In the next chapter, the pedagogical implementation will be defined, including information about the vision of language, curriculum and classroom that were taken into account.

Chapter 4: Pedagogical Intervention and Implementation

4.1   Introduction

This chapter includes a description of the pedagogical implementation carried out to address the lack of English basic vocabulary in students with hearing impairments and the report of the different stages followed to provide a possible solution. In the same line, the presentation of the vision of language, learning and curriculum support the selection of the pedagogical strategy, and the classroom methodology provides a detailed elucidation of the instructional design of the lesson planning.

4.2   Visions of language, learning, and curriculum

4.2.1   Vision of language

In this study, language fulfills two purposes: the first one as a tool for learning since the learners with hearing impairments may to increase their lexicon and access to a wider amount of information available in different resources such as Internet, video-games, and social networks. In this sense, participants might use new vocabulary in a simple and daily written communication with a friend or find and understand them when reading. As pointed out by Grosjean (2001) by means of the language, the acquisition of knowledge about the world will be possible; thus, students with hearing impairments could feel themselves as part of a community, becoming progressively part of two words that have been separated by the use of two different linguistic systems.

The second purpose is language for supporting learning. Cummins (2000) states that conceptual knowledge produced in mother tongue plays a role by helpingin the acquisition of another language. Thus, the participants' first language, CSL, worked as a stepping stone in their

intitial learning process. Its use promoted the development of thinking operations and affirmed the understanding of the concepts that they were learning. For Bouvet (1990) "sign language allows deaf children to experience what a language is without any limitation" (p. 141). It is the way the participants used to explore a new linguistic system and this permission gave them a sense of success and satisfaction since they were able to use their first language to show understanding.

4.2.2 Vision of learning

This research study aimed at providing the opportunity to integrate students with hearing impairments in the process of English learning based on their natural desire to learn and their need to be empowered to have control over their learning process, principles of a humanistic vision of learning (Rogers &Freiberg, 1994). This learning environment remarked the importance of human needs and interests, as Huitt (2009) states, acting with intentionality and values to fulfill personal potential and starting to consider English as a plausible goal to include in learners' life project.

Additionally, Rogers and Freiberg (1994), and Brown (2000) set the teacher as the responsible to establish an environment where learners feel confident, their needs are taken into account, and positive comments are used instead of highlighting just the mistakes and errors. Besides, teachers became the facilitators of students' learning through interactions with others allowing the attainment of the goals proposed in a lesson.

In a humanist classroom, students are emotionally involved in learning and teachers may achieve this by keeping criticism to a minimum and by encouraging them, in plain terms, to feel good with themselves. Gage and Berliner (1991) consider that students will learn better when the conditions are appropriate and they are not exposed to an unapproachable environment. To

conclude, learning a language is an aspect of personal identity, self-knowledge feelings, and emotions, in which everyone should be respected, accepted and considered with the same opportunities to learn.

4.2.3   Vision of curriculum

The vision of curriculum is based on Grundy's (1987) technical and Brown's (2006) humanistic perspectives. The Technical view presented by Grundy describes how curriculum is designed to achieve specific outcomes in students at the end of the process. Grundy states a general organization of the curriculum based on Aristotle's influential categorization of knowledge which describes three disciplines: the theoretical, the practical and the productive.

The first one is related to how the objectives and a plan are set at the beginning of the course focused on establishing contents and how learners are going to achieve the goals. The second discipline is related to how those aims and plans take place through the praxis. That is, "the curriculum is not simply a set of plans to be implemented, but rather it is constituted through an active process in which planning, acting and evaluating are all reciprocally related and integrated into the process" (Grundy 1987, p. 115). It is relevant to highlight how the teacher plays an important role in the development of the planned goals in which he/she needs to promote a commitment to human emancipation, interaction and an active student's participation. Finally, the productive discipline makes emphasis on the outcome or product as a result of the process carried out in the course.

The Humanistic view provides meaningful elements to the development of a plan for the this population. For Brown (2006) studentsare seen as the core of curriculum and school must contribute to social construction in order to improve or change the learning conditions to learners. Three characteristics arise from this perspective: a) promotion of values (responsibility,

respect for others and the law, tolerance, justice, non-discrimination, among others), b) students'

needs and interests as the core of the curriculum and, c) setting of a rich learning environment

(Brown, 2006). In this sense, the plans and objectives proposed must be focused on student as

the main member prompted to develop his/her skills in a well-organized context.

To sum up, there are two perspectives which respond to the plan and design of the

curriculum for students with hearing impairments: the promotion of learning valuable content in

which students are prompted to achieve goals and the setting up of a meaningful learning

environment that acknowledge their specific learning needs.

4.3   Instructional design

4.3.1   Lesson planning

The lessons (Appendix I) for the current study were designed attending to the principles

of a transactional environment which promotes the exchange of information taking into account

students' interest (Ur, 1991) and a controlled practice which focuses on structured instructions

designed by the teacher and with predicted student responses (Brown, 2001).

Each lesson was developed following these stages: at the beginning a Power Point

Presentation was used to review the vocabulary presented during the previous class. The students

had a list of words at the white board and they were guided to point the word related to the image

presented or they raised their hand to write the word on the board. During the second stage, the

new vocabulary was introduced by means of a set of pictures, which most of the times were

about teachers' personal information or including familiar topics to them. The new vocabulary

was included into a short and simple sentence and the word to be learnt was underlined.

Next stage was designed for students to recall the new vocabulary by means of handouts

(Appendix J) which included exercises of association, completion and organization or games

with pictures (dominoes, lotteries). The instructions given to students were accompanied with body language, facial expressions, and mimics, which were convenient to support the learning of a word and fully understand the content of the lesson. At the end of each session, students took a test designed by means of Hot Potatoes applications to recall the vocabulary learnt during the lessons. As follow-up, on-line tasks were assigned to the students to reinforce the vocabulary (Appendix K).

The topics were selected considering the vocabulary syllabus designed for sixth graders which includes topics such as colors, animals, personal information, greetings, class commands, adjectives for physical description, feelings, likes, and dislikes related to food, professions with simple present, daily routines, and vocabulary related to the use of Facebook and the e-mail.

The images used to design the material and present the topics were taken from *google.images* and from the teacher-researcher's personal files. Teachers' personal photos allowed them to contextualize the new vocabulary by using realia in class to make the learning experience more memorable for learners with hearing impairments. For the participants of this study, the use of these resources responded to practical and motivational reasons like to promote engagement, to check for understanding and to facilitate learning (Harmer, 2001), among others.

The use of technological tools to collect information about students' progress at the end of each lesson and to promote autonomous work at home was meaningful in order to teach English to students with hearing impairments considering the role that Chappelle and Jamieson (2008) assign to the use of a computer for making linguistic features more relevant and explicit than oral interactions. The computer assisted tool Hot Potates was used during this intervention to design the tests applied at the end of each session (progressive, mid and final tests) as explained in chapter 3. When it was possible for the students to take the test on the computer, it

provided them with an immediate feedback (a percentage score) and it also gave them the opportunity to do the activities as many times as possible.

Aside from these tests, the field notes recorded in a format designed by the researchers gathered information about the students' reactions towards the implementation processand to the process of learning they were carrying out; the strategy used and the kind of interaction the participants had with their peers and teachers.

4.3.2 Implementation

The pedagogical intervention initiated with an informal conversation with the group of students with hearing impairments to present them the main objective of the proposal. The presence of an interpreter was necessary to communicate the information to the students in their first language and to allow the teachers to know any question and concern from them. Then, the researchers proceeded to get permission from the school principal, the coordinator and the students' parents to start the pedagogical implementation.

Teachers also attended two students' regular classes with hearing impairments; one of CSL as their first language and another of Spanish as their second language. This step was essential to know some strategies used by the other teachers to develop their classes with learners with hearing impairments and to have a better understanding of student-student and teacher-studentthe interactions.

Subsequently, twelve face-to-face sessions of two to three hours took place depending on the topic to be learnt. All the sessions were carried out in the opposite shift of students' regular schedule to avoid affecting their regular classes. At the beginning, students were required to complete a needs analysis paper-based questionnaire since students had not been trained yet in the use of the software, and it was applied in order to identify the participants' English

knowledge. The second array of tests was the progressive tests. These were administered to verify what knowledge students had reached at the end of each session. In session number seven, students were guided to take a midterm test to verify the progress they had reached till that point. Additionally, a second pedagogical intervention phase of three sessions was necessary in order to validate the findings and to collect more data.

The vocabulary presentation was displayed mainly by using an image or a picture. Once it was shown, the written English word was presented to students so they could use new vocabulary, infer meaning and have a clear understanding of the information provided. In the lesson reviews, the method changed in order to recall vocabulary because the written word was presented first and then the image.

Lastly, a final test called achievement test was used to record the progress related to vocabulary learning and to evaluate the validity of the strategy used. The mid and the final term tests included activities to check vocabulary concerning to commands, feelings, and routines. At this phase, the researchers decided to include certain exercises related to sentence structure and syntax, considering that the entire set of vocabulary presented during the implementation was included in a sentence, even though students were not guided to focus their attention on this aspect however, the researchers wanted to check to what extent the students had attained certain level of awareness on the sentence structure. These tests were presented as another activity and not as an exam since their main aim was to monitor students' progress related to the vocabulary level reached.

In the post-stage of the intervention, students were guided to develop on-line exercises at home to improve their English learning, enrich knowledge in vocabulary and promote autonomous learning. Additionally, teachers applied a recorded interview to examine students'

perceptions about the implementation. The objective of this stage was to collect information about the student's performance and progress in terms of vocabulary learning after the pedagogical intervention.

4.4 Conclusion

This chapter presented a description of the visions of language, learning and curriculum that provided the researchers with theoretical support to select, plan and design the different activities and material to allow students to reach basic English vocabulary knowledge by means of visual aids.

The implementation was intended to grant students with the possibility to learn a set of English vocabulary which can become an opportunity for students to recognize their potentialities and their ability to start a process of literacy on this language in spite of a physical impairment which is considered as an obstacle for learning.

The methodology and the materials were planned taking into account students' needs and learning conditions. This intervention allowed participants to use visual aids as a supporting tool to acquire a noteworthy level of lexicon in a foreign language through face to face sessions that suited learners' learning style and supported all the process to engage participants in the process of learning a foreign language.

The following chapter will described the process used to analyze data, the procedures applied to validate it and the corresponding analysis based on the information gathered.

Chapter 5: Results and Data Analysis

5.1   Introduction

This chapter describes the methodology selected to carry out the analysis of the data

collected through the procedures described in the previous chapters. It also describes the

processes of data management and data reduction to validate processes for triangulation

purposes. These processes were attained following the principles of the Grounded theory

approach, "theory grounded in data which has been systematically obtained through 'social'

research (Goulding, 2002, p.41). Corbin and Strauss (2008) states that that approach guarantees a

solid theory as final result. These procedures helped to obtain categories, subcategories and their

relationships directed to identify the extent to which the use of visual aid and technological tools

promote English vocabulary learning in students with hearing impairments.

5.2   Data management procedures

In order to start the data analysis, it was necessary to organize the information collected

through the instruments applied which were: tests using Hot Potatoes application, twelve field

notes and 20 students' interviews. These instruments were digitized and stored in a MS Excel ™

matrix.The field notes were transcribed after each session organized by number of lesson and

date chronologically. At the beginning of the analysis process, each participant was given a code

(for instance, S1) to assure his/her confidentiality and to organize the data.

5.2.1   Validation

In pursuance of determining the validity of the collected data, it is important to describe

the process of triangulation developed while administering and analyzing the instruments

selected during the implementation. Sagor (1992) states that triangulation "compensates for the

imperfections of data-gathering instruments" (p. 45). Thus, when multiple measures yield the same results, it can increase confidence of the data and when multiple measures fail during the process, it can raise the importance of the follow-up questions.

This process was attained by the design and application of the instruments mentioned above, which allowed the researchers to collect quantitative and qualitative information. Based on this information, researchers compared and contrasted data conducive to identify patterns, which granted the construction of two main categories that will be hereinafter described.

5.2.2 Data analysis methodology

The process of data analysis was carried out in three stages. Initially the instruments were piloted with a group of colleagues to receive feedback, to avoid bias and to refine them considering the objectives of the research study. The second stage was the application of the instruments with the participants. The final stage was the data analysis developed under the principles of the Grounded Theory, in which the researchers determined the categories, the subcategories, and the core category and their relation to the research question. The following reasons support the selection of this method:

● For Goulding (2002), it allows the systematic collection of data which can offer a clear and precise guideline for the verification and validation of findings.

● Researchers utilise this method when there is limited theory regarding the process of interest. (Community with hearing impairments in Colombia approaching the learning English as a foreign language)

● Its main source of data collection is the interview but other forms of data can be used for triangulation (field notes and tests) in order to contrast and validate the findings.

● The theory developed from a specific area (community with hearing impairments in a public institution), can become automatically the stepping stone for developing formal grounded theory (Glasser & Strauss, 1968).

The strategy selected to implement the data analysis was the coding process defined as a method that lets data to be "segregated, grouped, regrouped and re-linked in order to consolidate meaning and explanation" (Grbich, 2013, p. 21). Thus, this enabled the researchers to organize and group similar data into categories or families that share some characteristics (Grbich, 2013). This process was divided into three subsequent stages: open, axial, and selective coding (Appendix L). The sequentiality of these three stages granted the simplification of the data into manageable units, which hold the meaning and the quality, and that finally integrated the data into a fully explanatory core category which is defined as "the main theme that subsumes and integrates all lower level categories in a grounded theory, encapsulates the data efficiently at the most abstract level and is the category with the strongest explanatory power" (Given, 2008, p. 131).

Down below, a detailed description of the coding stages is presented, along with the findings obtained through the analysis process.

5.3 Categories

5.3.1 Introduction

The researchers established two main categories and the core category through three phases of the coding process. The first phase was an open coding: the researchers read and analyzed the information provided by the data in order to identify patterns which were relevant to the nature of the research study. The second phase was the axial coding: those patterns were refined by seeking connections among the concepts and grouping them under more specific

chunks. Subsequently, four categories emerged. The last phase was selective coding and these four categories were narrowed to two main categories that led the researchers to establish the core category.

5.3.1.1   Category mapping

Open coding was carried out using color-coding technique to reduce the data collected through the instruments applied. Having systematized the data from each instrument, the objectives and research question were contrasted with that information to find patterns which were relevant to the research study. The patterns that emerged were given with a colorand gathered as initial codes and categories.

In the Axial coding stage, the researchers'task was to pinpoint a link between codes and categories obtained through the process of analysis, which was supported by existing theory. To achieve this correlation, codes and categories were organized in a way that facilitates comprehension and grants the simplification of data without losing its quality.

5.3.1.2   Identification of core category

In the selective coding stage, the core category was established (see Figure 1). The researchers identified it based on the analysis of the two main codes that emerged from the axial coding stage. The category was formulated in one sentence that explains the relation between the findings and results of the data analysis and the objectives of the study in a simpler way.
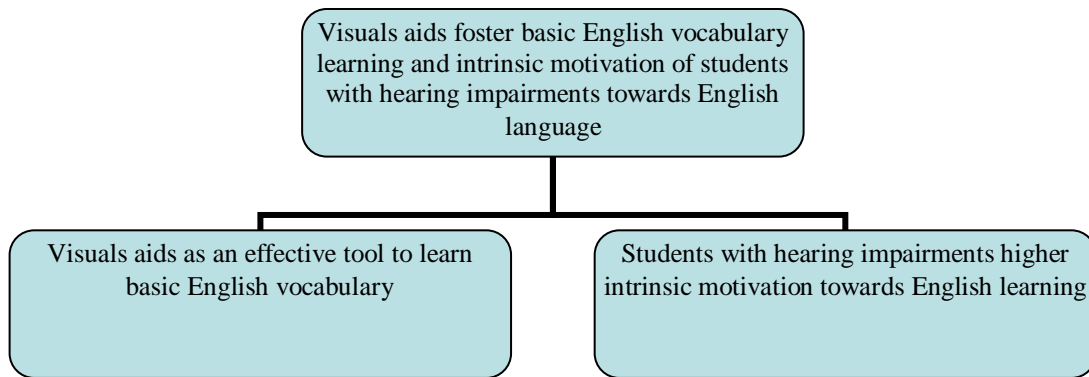
Figure 1. Core Category

5.3.2   Analysis of categories

5.3.2.1   *Description of categories*

Open, axial, and selective coding present the procedure of how categories and codes

emerged. An analysis of each category and their corresponding subcategories will be explained

below.

5.3.2.1   *Visual aids as an effective tool to learn basic English vocabulary*

The first category makes emphasis on the effectiveness of using visual aids such as Power

Point Presentations, flashcards, printed material, Hot Potatoes tests, and games as an effective

strategy to provide students with hearing impairments with a pedagogical support during the

lessons and enabled participants to associate the images with the English vocabulary to be learnt.

Nover and Andrews (1998) support this statement when they claim "many deaf and hard of

hearing children primarily use vision to process language" (p.1). Thus, the students were

involved in a visual learning environment with the opportunity to see graphic representations of

what they were studying and used their vision as a primary means of receiving information and

learning.

Having involved participants in the educational environment described, the results inidicatedhow students spelled words they had learned, and the benefits of using images when learning the new vocabulary. According to Kaçauni (2014) these two aspects are effective in the acquisition of information as well as strategies used by the teacher to lead learners through the process. Findings reveal that participants showed preference for the pictures and exercises displayed in the power point presentations due to their personal learning style, as shown in Excerpt 1which was translated into English from signs language as the other ones.

I like English because I felt very good and the activities that the teacher gave me were helpful to learn the words in different forms and I use them to do the activities. I liked it because I understood with the pictures the meaning of the words. S10

Excerpt 1. Interview

Support for attainment of new English lexicon and educational support emerged from using visual aids are two subcategories that illustrate how visual aids helped students with hearing impairments in the learning of English basic vocabulary. They are described as follows:

5.3.2.1.1   Support for attainment of new English lexicon

The use of the mentioned visuals aids provided students with a support to recall the vocabulary studied in previous lessons in order to completed the exercises proposed more efficiently. This methodology highlights the impact of using visual aids as a significant and practical way that support students since they were able to conclude the activities with the printed material and associate the image with the corresponding word (see excerpts 2-3).

The images facilitated to recall the English word, it was easier to understand when the image was associated with the word. Students sometimes gave more than one sign to a word according to their previous knowledge.

Excerpt 2. Field notes, September 5th, 2014

I liked the exercises with the crossword and the games. We had an image to find the word and then we wrote it in the paper to complete sentences; for each picture we had a

> *sentence. S6*

Excerpt 3. Interview.

Even though the students were not asked to be aware of the grammatical construction of the sentences, the vocabulary they were prompted to learn was included in short sentences to help them achieving better comprehension and learning new words. They just had to identify, recall, and associate the word with an image to demonstrate understanding.

Excerpt 4 showed that participants recognized the words studied in previous lessons when they were requested to develop exercises in which they found new words. In Pouwel's words (1992) "visual aids familiarize each student with the best way to learn new vocabulary" (p. 391). Thus, one of the factors that helped the learning of vocabulary was the presentation of the lexicon more than once with the use of these resources through exercises in which they had the opportunity to practice as shown below.

> *I remembered words of some animals. I liked the activity of the lottery because I had to link the word with the animal. It was easy and I enjoyed a lot. The teacher gave us a paper to write the name of the animals that we have found and learned. S3*

Excerpt 4. Interview.

Janákova and Berent (2005) address the importance of using visual aids or any resource students can find attractive and enjoyable. The use of images was essential to lead students into the process of learning new vocabulary because participants understood the topic of the lesson with explicit information. Students with hearing impairments had limited vocabulary and they needed to be exposed to a high quantity of visual input that could help them to learn a language that they had never studied. Therefore, visual aids supporting this learning process proved to be appealing as these sources allowed participants to attain their learning aims, as demonstrated in excerpt 5.

> *I liked the activities that include photos that we have seen and then linked them with the words or written sentences in the paper and others in the computer. S8*

Excerpt 5. Interview.

Besides, the permanent use of written language helped participants to recall the word's meaning and facilitated vocabulary learning. For instance, they were able to perform classroom commands when the teacher showed them in written form. According to Nikolaraizi, Vekiri, and Easterbrooks (2013), visual resources to improve learning in students with hearing impairments are the most effective tools for facilitating comprehension and information retention. For researchers, the visual aids used during this implementation worked as the channel for communication between the hearing teacher and students with hearing impairments. Considering the absence of an interpreter during the lessons and the researchers' limited knowledge of sign language, the images were tools that allowed recognizing that students received proper input. Students used these images to show understanding when they finished successfully most of the exercises proposed (see excerpt 6-7)

> *We needed to use the image or sign to help them to remember the word, and gave them examples. With short wordsit was easier, they remembered them clearly. Most students represented the command when the teacher showed in the written form because they have been used it in all classes.*

Excerpt 6. Field note, September 9th, 2014

> *All lessons were enjoyable and the activities too. It was difficult at the beginning, but we knew a few words and it was easier to do the activities in the English class. S17*

Excerpt 7. Interview.

The vocabulary was also included in a short phrase to familiarize students with the appropriate use of the word in a meaningful context. They were able to identify, remember, and associate the word in a short sentence, which demonstrated a significant level of understanding.

Furthermore, during the final interview, students affirmed that even though they did not

learn all the vocabulary, they were able to identify and write certain words in English. According

to Nemati (2009) at early stages of language development, learning vocabulary is a challenge for

learners. Thus, the visual vocabulary instruction helped students to memorize it when they

applied it in contextualized settings. Participants demonstrated that the vocabulary learned during

lessons was beneficial and meaningful for them, as shown in excerpt 8.

I learned some words that I have never studied before. I liked the vocabulary used in
Facebook *website, I think that it is important to know. S14*

Excerpt 8. Interview.

Otherwise, during the lessons, the researchers evidenced some students' outcomes related

to vocabulary learning. If it is true that students exhibited certain spelling problems, letter

omission, and overgeneralization when the teacher provided students a clue, for instance the

letter "S", they thought that the word was always the same; students used *short*, instead of *strong*

or *soup*, considering that "*short"* was one of the first words they learnt. In fact, students attained

certain levels of learning compared to their initial situation as it is shown in excerpt 9 and certain

workshops developed in class.

In Gap-fill exercises with an initial letter as a clue, students tend to generalize this letter with
the words that they have learned firstly. Thus, any word that starts with S they will associate
with "Strong", which has been already included in their register of words.

Excerpt 9. Field note, September 17th, 2014.

This finding is related to Brown's arguments (2007) who states that learners in the

process of learning a foreign language occasionally tend to omit words or to overgeneralize

because a pattern is memorized in this process. The following workshop shows that the student

displayed some spelling mistakes and letters' omission, but it is clear that they attained the goal

of the lessons which was to identify the action and write the corresponding word based on the

vocabulary provided in the word search.
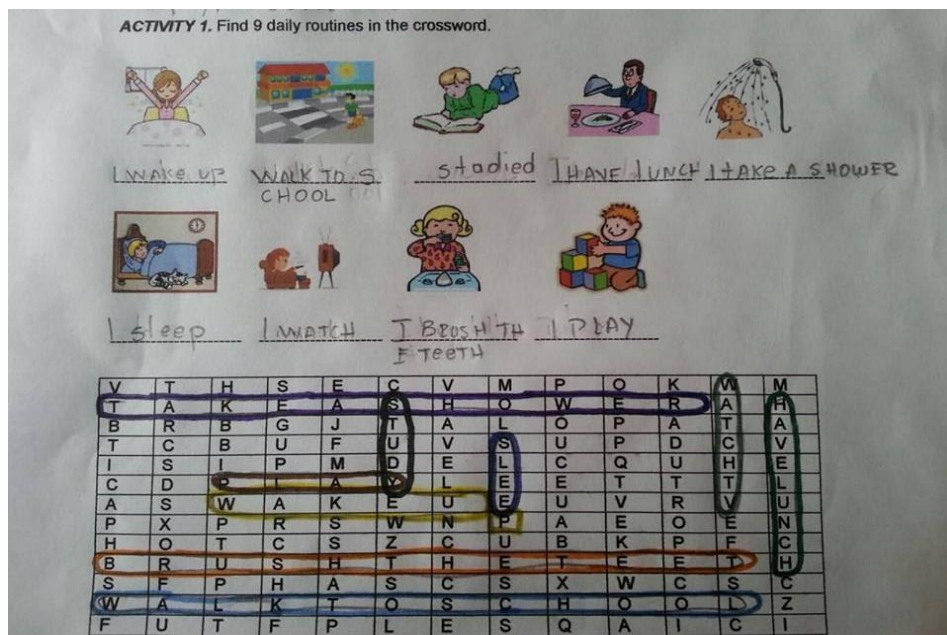
Workshop, Student 7

Different word categories such as: nouns, adjectives, and verbs were included to show

how students used in a short phrase and enriched their lexicon. This scaffolding process started

with simple topics and then included more complex exercises with the assistance of visual aids

and printed material. The knowledge of different words allows learners to produce well-formed

sentences (Harmer, 2001). The results revealed that students attained a high level of

understanding in vocabulary learning since they recognized the words appropriately and

associated them with the image displayed in the paper. In regards to the usage of crosswords,

Nova (2010) reported that one of its benefit is to acquire new vocabulary and terminology with

an exact spelling as a model in learning. Such visual tool, although elementary in nature, had a

significant effect on vocabulary achievement as a part of students' learning progress.

In the following activity from a workshop, the student identified some adjectives and used them properly in the description.

Workshop, Student 5

5.3.2.1.2   Educational support emerged from using visual aids

The data collected from the interviews and field notes used during the implementation granted the identification of three different kinds of support, which led the participants to attain a suitable development of the activities proposed. These aspects are Instructional material designed and implemented by the teacher, First language support and Peer support which are described hereafter.

Instructional material designed and implemented by the teacher

In order to create a learning environment which may respond to the nature of the study and the students' particular learning circumstances, two kinds of material were designed and implemented by the teacher: on-line activities and printed worksheets.

As Nikolaraizi, Vekiri andEasterbrooks (2013) affirm, the learners' potential can be maximized when teachers design differentiated instruction having in mind their needs. Thus, the design of the resources focused on using visual aids, displayed as a "key element on differentiated instruction and universal design for learning with regard to deaf learners" (p. 459). Researchers aimed at promoting the development of the first three critical thinking skills proposed in the revised version of Bloom's taxonomy (Anderson &Krathwohl, 2001): remembering, understanding, and applying.

Furthermore, Bloom's taxonomy (explained in chapter four) allows educators to do a classification of the levels of thinking, important in learning when designing class objectives and which provides specific verbs and products to attain each one of the levels. It is necessary to establish a hierarchical framework, so that learners can achieve the prior ability before the next more complex one to facilitate understanding and retention (Forehand, 2010).

The exercises created with Hot Potatoes applications, supported students' learning since they provided them with visual input to be associated with the English word. Thus, based on the characteristics of the application and the kind of exercises, it was possible to perceive how they contributed to the promotion of basic thinking skills, such as identification, classification, and association; the ones used throughout the entire implementation at the end of lessons to do the assessment stage. The finding is consistent with Reynolds and Rosen's studies (1973), where students' text comprehension and information retention were facilitated because of the use of a pictorial format.

Furthermore, the participants were prompted to complete on-line activities at home to reinforce and practice the topics studied in class and encourage their autonomous work. Even though not all the learners undertook these complementary tasks, it is important to mention the

reactions of those students who did them. The positive effects related to class such as

participation and engagement, vocabulary recall, consolidation of a positive self and group

image, peers assistance, as well as attitudes toward learning emerged within a learning

enviroment in which technology and visual aids are included attending to students' needs.

Similarly, Boone and Higgins (2007) found that multimedia applications are beneficial for the

promotion of differentiated instruction, considering that the learning material will suit students'

needs, allowing experimentation and practice at their own pace.

In excerpts 10 – 11 are shown the participants' comments about the use of online

resources and give an account of their behavior in class:

> *...when I got 20% or less I did the activity again and as I already knew the answers I got 80% or sometimes 100%, when I did the activity more than twice. When we started the other class, I said most of the answers and my partners said ¡woaaa! S15*

Excerpt 10. Interview.

> *They told us that they have checked some of the web pages suggested by the teacher and they like some games. A couple of students brought to the class one or two new words they have learnt when doing the on-line activities.*

Excerpt 11. Field note, February 13th, 2015

First language support

As a normal stage in the learning process, the interference of the first language operates

as linguistic transfer from the native language to a second language. Brown (2000) points out

that when a person is in the process of acquiring a new language, his/her first language plays an

important role. Additionally, Bouvet (1990) highlights that even though children with hearing

impairments cannot acquire a vocal language naturally, it is important to give them the

opportunity to use a language they already handle (CSL) to understand how the foreign language

works. Thus, the support offered by the students' first language was crucial in two senses: firstly,

it worked as a means of communication among the teachers-researchers and the participants of

the study, allowing to convey meaning. Secondly, as Brown (2000) affirms, it was a facilitator

for students to get familiar with the new language; besides, letting them notice that they could be

able to achieve the goals proposed for the implementation. Excerpt 12 of the interview and

excerpt 13 of the field notes, evidenced aspects related to the use of the first language as a

support of their learning process.

They also teach us many words as tall (sign) and then we associate the word to sign language and to the word in English. S12

Excerpt 12. Interview.

The teacher has to use the sign to help them to recall the word. Likewise, when we provide the written English word, the students immediately used the sign language to translate it.

Excerpt 13. Field notes, September 10th, 2014

On the other hand, according to Odlin (1989) the negative transference of linguistic

patterns can occur when a learner takes a structure that belongs to his/her mother tongue to

construct meanings in the foreign language, but that transfer might refrain the learning of new

elements and mistakes may appear gradually. The possible negative effects were not visible at

the word level; they might occur at the sentence level considering that the use of some

prepositions and linking words in CSL are different compared to the grammar structure of

written languages, which make the learning process more difficult and complex for learners with

hearing impairments. Further studies could investigate such aspects.

Peer support

This aspect is understood under the perspective of giving and receiving knowledge

through collaborative or practical help as a visible and effective learning strategy that supports

academic instruction and social skills (Riester-Wood, 2010). It allowed the researchers to notice

to what extent certain students had learnt the new vocabulary in order to help others to finish

their activities or correct their peers' mistakes when they were prompted to solve an activity at

the billboard. Learners with hearing impairments were enthusiastic to show their understanding

and this enabled other students who had difficulties to achieve comprehension and to attain the

lesson goals.

Moreover, the Zone of Proximal Development (ZPD), the main construct of the socio-

constructivist theory, stands that when learners are assisted by others, it is probable that they can

achieve more goals than working on their own (Walqui, 2006). Students realised that it was more

enriching to work in a collaborative form with the peers' assistance and support in the attainment

of the proposed learning goals of the class. In the same line, Dooly (2008) asserts that

collaborative learning immerses students to work actively and allows them to interact in class

when they perform together in their learning. Therefore, students evidenced a sense of how they

were learning and had clear ideas about their work (see excerpt 14).

> *So, I did better when my partners gave hints about what to do or what image I had to point, I liked more when they helped me and then I helped them when I knew the image and the word. S18*

Excerpt 14. Interview.

Johnson, Johnson, and Smith (1989) state that through collaborative learning students

maximize their own and each other's performance. This sort of support and its outcomes were

noticeable when learners with hearing impairments exhibited confusion about the meaning of a

word or to accomplish an exercise; immediately all their peers, showing pride of knowing the

answer, led them to get the solution, as shown in excerpt 15. In consonance with earlier studies

(Avila, 2010), researchers witnessed a positive learning atmosphere when the students with

hearing impairments worked in groups and how they used their first language to offer support to

other peers that were difficult to understand. Likewise, as regular classrooms, most of the times

the participants with hearing impairments did not reveal reluctance to work with anyone.

> *It is evident the interest for both, working on the computer and working in pairs. The students prefer to work with the ones they already know, they feel more support to complete the task.*

Excerpt 15. Field notes, September 1st, 2014.

However, occasionally, students thought that working in pairs meant to let the other person copy and/or imitate what they did. There were students who easily understood what to do and how to do it, and it impliedthat others who had difficulties preferred to work with them in order to accomplish the class goal, as demonstrated in excerpt 16.

> *In addition, in some class exercises, they help each other and correct the word is misspelled, showing how it should look like.*

Excerpt 16. Field notes, September 12th, 2014.

5.3.2.2   *Evidence of students with hearing impairments higher intrinsic motivation towards English Learning*

During the pedagogical implementation, motivation was a feature that students with hearing impairments presented when doing the activities related to basic vocabulary. The motivation is an integral part in second language learning process (Gardner, 1985) and this was manifest from the beginning of the experience. In this sense, the evidence and the attitudes shown by the participants are related to intrinsic motivation, which is defined as the doing an activity for its inherent satisfactions rather than for some separable consequence (Ryan & Deci, 2000, p. 56). Participants decided to take active part of the activities under the perspective of learning a language because their interest during lessons was permanent, as it is evidenced in excerpt 17.

> *When students received the information of dates and schedules for the English lesson, they showed their happiness for being included in this English learning process as a Foreign language. They do not struggle with the lesson in opposite shift in spite of living far from the school.*

Excerpt 17. Field notes, September 1st, 2014

Likewise, participants expressed to be interested in the project after having considered aspects like the distance and the lessons in a different shift, as an extra activity for them which was not graded.

In excerpt 18, the student mentioned their motivation from the beginning of the project because of his own concern and also encouraged by his mom.

From the beginning it caught my attention and my mom told me that I should take advantage of the opportunities. S20

Excerpt 18. Interview.

Smith (2003) states how students with high internal motivation can obtain goals beyond the expectations as a respond to their weaknesses. This element is one of the main aspects in the learning process taking into account the students' context and also the evidence gathered through the whole process. Gallagner (1964) suggests that an individual operating under high motivation can overcome difficulties in learning and negative personality factors might be compensated by a good environment. Therefore, it is important to mention the components of the learning environment provided with visual aids and a set of resources which positively influenced the performance of students with hearing impairments as they were active participants.

The following sub-categories describe how elements of intrinsic motivation played a relevant role toward learning of basic vocabulary. The first subcategory focuses on*Personality factors* which emerged when students were doing the activities and contributed to their effective development and the second is related to *Emotional and behavioral engagement* shown by the students.

5.3.2.2.1   Personality factors

The learning environment was provided with activities in which the collaborative

learning was considered. During the pedagogical implementation, there were two variables

related to intrinsic motivation defined as *risk-taking* and *self-esteem* which were evident and

belong to the personality features.

Young (1991) states that "risk-taking is the willingness to venture into the unknown. It is

an eagerness to try something new and different without putting the primary focus on success or

failure, learning is the reward of taking risk" (p.9). In this sense it was evident that participants

developed and tried to carry out each one of the activities proposed during the lessons without

showing any resistance or apathy, as evidenced excerpt 19.

> *The students are confident when they identify the word; they are motivated by*
> *writing it on the whiteboard, they are happy to participate and if it is right, they feel happy*
> *because of their achievement. And when they are not sure they get angry; however, they*
> *take risk without considering any mistakes.*

Excerpt 19. Field note, September 17th, 2014

Thus, researchers identified the learners' attitudes when they participated in writing

activities related to basic vocabulary in which they did the exercises without paying attention to

any possible mistake; their intention was to practice what they were studying.

Regarding self-esteem, it was possible to increase its levels by using the strategy of

working in groups and in pairs. Students demonstrated confidence and positive feelings to

develop the different activities. According to Brown (2007), self-esteem appears to be an

important variable in language learning. Students showed that their level of self-esteem increased

because they carried out the activities as they took the risk to develop them without any type of

inhibition. Theunissen et al. (2014) state that when communicative skills are improved, self-

esteem levels are increased. In this sense, excerpt 20 shows that it was possible to notice how

students expressed that they felt encouraged and motivated in their learning process and to be

included in the English community.

> *Many students expressed that they had changed the language of their Facebook profiles to English and also some of their contacts asked to them where they had learnt it. We consider participants were proud of their work as other people recognized their effort.*

Excerpt 20. Field notes February 13th, 2015

Students manifested that the level of self-esteem raised when attending these sessions

because they could learn vocabulary and use it for their future life projects (see excerpt 21)

> *Yes, of course, to learn it and someday to teach it people like me. S17*

Excerpt 21. Interview.

5.3.2.2.2   *Emotional and behavioral engagement*

Engagement towards English learning was an attitude displayed during and after the

lessons. Foster, Long, and Snell (1999) establish that engagement can be assessed based on

behavioral and affective aspects. On this respect, Hollingshead (2013) states that emotional

engagement is perceived as the positive or negative reaction to classmates and teachers which

affects the development of the class work. Thus, it was evident that during the implementation

students arrived to the sessions and stayed along the entire process as an indicator of

engagement, as excerpt 22 shows. In this sense, the main motivational factor which engaged

them in the project was the opportunity to learn English, as they expressed in the initial survey.

In addition, the methodology of the lessons and the material designed were essential to assure

their attendance and their active participation during the face to face sessions and, in certain

cases, when developing the optional on-line tasks.

> *Well English is new for me; we had never studied this language at school and I liked the lessons so much that we took in the morning shift. S9*

Excerpt 22. Interview.

A result of students' active engagement was evident in their final interview since they expressed how valuable and enriching they had found this learning experience (See excerpt 23).

> *..good, I think it was a very beautiful and important experience for our lives, so I had never been in an English lesson. S3*

Excerpt 23. Interview.

Another hint related to students' emotional engagement has to do with the results from the assessment tools (printed and Hot Potatoes tests). Although the participants showed low quantitative scores, they expressed their happiness and gratitude for this opportunity to learn vocabulary in English excerpt 24 evidenced it. In this sense, Foster, Long and Snell (1999) state that engaged students are characterized by their persistence and interest when developing academic activities and tend to achieve academic success.

> *The students, who are able to complete the exercise, express their happiness. Besides, when they receive the final score from Hot Potatoes application they show their satisfaction.*

Excerpt, 24. Field note, September 7th, 2014

Regarding to behavioral component, students participated constantly in their learning process (See excerpt 25). This attitude is considered as an active engagement in which students play a productive role by doing activities like: writing, following instructions, working with their classmates, working autonomously, among others (Guardino& Fullerton, 2010).

> *I think that people learn step by step, so it is a little difficult so we need to study more and learn more and review at home. S17*

Excerpt 25. Interview.

The positive behavior took place due to the learning environment created, which helped population with hearing impairments to be engaged in the development of the study. Additionally, one evidence of students' active engagement was the low level of disruptive behavior which was measured by direct observation. Guardino and Fullerton (2010) mention

specific signals of disruptive behaviour, such as: getting out of the seat, not following

instructions, and making unwanted physical contact that can be reduced depending on the

classroom arrangement. The visual distractions are common when working with learners with

hearing impairments due to their high sense of peripheral vision which causes learners to get

distracted easily (Guardino& Fullerton, 2010). However, these factors were not present in this

study, which might be evidence of students' interest for the activities developed and for being

part of this new learning project.

5.3.2.3   *Core category*

Visual aids to foster Basic English vocabulary learning and intrinsic motivation of

students with hearing impairments towards English language was the core category that arose

after analyzing the data and identifying the categories and subcategories. Visual educational

material can assist students with hearing impairments in their learning process considering that

they have access to visual information permanently (Baker &Easterbrooks, 2002; Marschark,

2005; Schirmer, 2000). The opportunity the participants had to learn English basic vocabulary

was enhanced by means of this tool which responded to their specific learning characteristics and

granted the establishment of a learning environment enriched with this kind of input. Moreover,

for students with a hearing impairments the use of visual sets up a concrete way to gain

comprehension of the concepts (Busch, 2012).

The implementation of this strategy was beneficial to encourage the students to

participate in the sessions, as they noticed their progress of learning when they could identify a

picture and related it with a word that had been studied. Koelle and Convey (1982) suggest that

students with hearing impairments might be engaged when they feel rapport. Participants

complied with the non-mandatory sessions, because they noticed there was a sufficient communication with the teachers through the material that was being used.

5.4   Conclusion

The provision of a learning environment enriched with visual aids and the use of technological tools contributed to the promotion of the basic English vocabulary learning in learners with hearing impairments as the first step of a reading process in which the teachers' support played an important role. Besides, the use of visual aids when participants were learning the language, promoted attitudes and factors related to higher intrinsic motivation which was an essential aspect that contributed to students' engagement in their English learning process. Despite of grammatical problems students exhibited ability and disposition to learn the language, in addition to levels of commitment and interest that were shown in the development of activities and the assistance to the sessions in the opposite shift. The next chapter will present the final conclusions of the study and the constraints faced in the pedagogical implementation.

Chapter 6: Conclusions and Pedagogical Implications

6.1   Introduction

This study was set up to determine the effectiveness of using visual aids in the promotion of English vocabulary learning in students with hearing impairments. When the appropriate conditions are established, this group of students can undertake an initial process of English literacy and better educational and professional opportunities can arise (Janakova & Berent, 2005; Macurova, 2005; Call, 2006; Avila, 2010). In this sense, the following section discusses aspects related to relevance of this study, constraints and further research.

6.2   Comparison of results with previous studies' results

One of the purposes of this study was to provide students with hearing impairments with the opportunity to learn a foreign language with similar conditions as regular students. Also, it was intended to integrate participants in a context that they had never explored before, encouraging them to become central agents of this new learning process. This idea is supported by previous research in the field. Avila (2010) designed a blended English course for university students with hearing impairments to allow them to be integrated in a process of foreign language learning fostering their motivation, autonomy, and collaborative work. Likewise, Molina (2009) asserts that the main objective of her informal study was designing an English course in order to provide basic levels of English to students with hearing impairments using an environment with a big amount of visual aids.

It was evidenced that the use of visual materials was an essential part to adapt learning environment and help students to boost their learning process. This finding is supported by Luckner, Bowen and Carter (2001) who claim that the use of visual material, including written

words, enhances the communication and learning process in the classroom. The present study concluded that the use of visual aids and technological tools were a support for teaching basic English vocabulary to students with hearing impairments. The use of visual material helped them to maximize their learning process, in aspects such as confidence that let them develop new learning tasks and reinforce basic thinking skills which may be extrapolated to other subjects.

The fact of providing participants with the opportunity to be immersed in a controlled educational context where English was not their first or second language agrees Berent (2001), Janakova (2005), and Call (2006). Those authors analyzed the circumstances that teachers of students with hearing impairments have to deal with and the responsibilities they should handle to boost learning. They also mention the importance of applying new technologies to integrate and facilitate up- to date practices in the teaching and learning process. Specifically, Call (2006) addresses that learning a foreign language improves cognitive and educational goals, promotes metacognitive awareness, denies confusion that a student with hearing impairments might suffer when learning three languages, rather highlights that this process boosts child self-esteem.

6.3   Significance of the results

Although there are limited studies on the topic in Colombia and the real English learning conditions of students with hearing impairments in public schools in Bogota have not been formally evaluated yet, researchers were informed by the interpreters of the fact that there is no public school where these communities take English classes. When learners with hearing impairments start their studies at the university and want to take English classes, they face the reality of not having received formal education on the subject and they are included in mainstream English language classrooms, where their particular learning conditions are not considered, for instance at Universities as ECCI and Universidad Uniamericana.

The present research study suggests a revision of the perspective about the quality of the education that communities with hearing impairments are receiving in the public institutions of our country. If it is true that there are laws and decrees (Decree 2369 of 1997, Law 324 of 1996, Law 982 of 2005) that state that any population with a physical, cognitive or emotional disability must receive the necessary support that guarantees an education which responds to these differences, those regulations need to be implemented and carried out with the necessary support provided by the institutions involved. The results of this study highlight that the reality is different and that more control and assistance are necessary; particularly for learners with hearing impairments who need to develop all their potential and have access to the same opportunities as their hearing peers.

This study has gone some way towards enhancing researchers' understanding on how the human potential can be promoted, granted that the appropriate tools are used to tackle specific learning characteristics. Many colleagues and people were either surprised and confused about teaching English vocabulary tostudents with hearing impairments, or excited and curious about the viability of this project. Certain parties of the society have no knowledge about the community with hearing impairments and their learning conditions, even when, there are nine schools that develop this process in our city and considering that recently more attention is being provided by the mass media. Thus, the findings of this study indicate that despite their physical impairments, this population has the same possibility to learn how to read and write English as their regular peers; it depends on the creation of appropriate conditions and enough pedagogical support.

The present study makes several noteworthy contributions to the field of inclusive English classrooms in public schools in Bogota, since students with hearing impairments

learning needs were taken into account when designing material and methodologies. Additionally, when students were engaged, because of the kind of methodology implemented, their self-esteem was boosted and more significant learning occurred. Therefore, the institutions have to be responsible to provide the proper conditions to assure a quality education for every individual.

At national level, the MEN (Ministerio de Educación Nacional) must rethink their policies about inclusive education related to English language. Thus far, students with hearing impairments are excluded of every situation in which English language is involved. However, this population makes also part of the community and their knowledge and contributions to the advance of the society are being hindered since they are not encouraged to learn a foreign language. Granted that Colombia intends to gain higher levels of English proficiency by 2019, population with hearing impairments should not be excluded. Furthermore, the inclusion of the these communities on these plans and policies might be an outstanding precedent for other countries and the international sphere in general, where still few studies have been carried out.

6.4 Limitations of the present study

During the development of this study, we found a main limitation related to technical issues. At the end of each one of the lessons students were guided to take a test designed with one of the Hot Potatoes applications. However, it was not possible to do it in some lessons because of the lack of laptops. For this case, it was necessary to take time to print the tests and take copies for each participant which caused delay in the implementation of the activities.

A second limitation was the lack of an available classroom. Since the lessons took place in the opposite shift, there was not an assigned room. In some situations, researchers spent time looking for a classroom available and equipped to develop the English lesson.

A third limitation was the delay of participants' literacy process because some of them were in the first stages of their L1 learning, which was an obstacle for referencing the English vocabulary studied. Thus, some of the words presented in the activities, like the vocabulary related to adjectives, were unknown and meaningless and they did not know how to use them in specific examples.This situation promoted reinforcement activities using a set of exercises which included students' context.

6.5   Further research

During the development of this study, it was interesting to achieve a more real perception of the process of learning English as a foreign language for students with hearing impairments related to methodological aspects which were proposed considering their needs and learning style. In this sense, it can be relevant to continue broadening this field and carry out subsequent studies in which English takes part in the curriculum framed upon the principles of inclusive education, which may be combined with blended learning perspectives. The goals of this deriving research study may focus on promoting writing and reading skills.

On the other hand, it is important to continue the development of research studies toinvestigate inclusive education at the national level, being one of the research interests at Universidad de La Sabana in the Master in English Language Teaching-Autonomous Learning Environments, where one of the national existing studies have been nurtured (Avila, 2010) Researchers believe that with more studies of this kind, the field could be effectively expanded.

6.6   Conclusion

Students with hearing impairments need to be included in English as a foreign language policies and programs in our national context. These need to provide this population with visually rich learning environments where educators are required to design and use resources and

materials that benefit them. In this sense, researchers proved that the use of visual aids designed, adapted or addressed to students with hearing impairments supports the learning process and meets students' special learning needs. The study was also a rewarding opportunity for the researchers, considering that it was a reciprocal learning experience where students with hearing impairments learned some basic English vocabulary, while sharing meaningful concepts related to sign language and learning styles with teachers-researchers.

San Carlos school's students with hearing impairments had the opportunity to have an initial and effective approach to English language. They could raise awareness on their capabilities to achieve certain reading and writing competence levels under the assumption that appropriate learning conditions were given. Through this research, learners with hearing impairments disability was not considered, as a disadvantage but, instead as an opportunity to teach from other approaches and to understand how they learn in a novel linguistic and cultural context (Enns, 2006).

Furthermore, with this study, it is expected that the process of inclusion becomes an opportunity to reflect upon the huge gap that exists between education given to regular students and the one that students with hearing impairments get. It is not simply what Montaño and Vera (2012) describe as integration (to have regular and students with disabilities sitting together), but the plan should go further, creating strategies and adapting the curriculum and lesson plans to what they really need, granting the same educational rights and opportunities for everyone.

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Appendix A: Need analysis survey

COLEGIO SAN CARLOS IED
ENCUESTA A ESTUDIANTES CON LIMITACION AUDITIVA
CONOCIMIENTOS DE INGLÉS Y DE LAS TIC

APRECIADO ESTUDIANTE

Agradecemos su colaboración respondiendo sinceramente las siguientes preguntas para determinar el nivel de conocimiento que usted tienen de inglés, su interés en participar en un curso de 24 horas y las herramientas que en su opinión serían más útiles para involucrarse eficientemente en este proceso. Para su comodidad la encuesta se hace a manera de entrevista y se cuenta con la participación de un intérprete de lengua de señas colombiana.

Nombre:_____ Curso:_____

1. ¿Ha tomado alguna clase de inglés en su paso por el colegio?
a. Si   ¿En qué curso?_____
b. No

2. ¿Ha tomado cursos de inglés diferentes a los ofrecidos en los colegios?
a. Si   ¿Dónde?_____
b. No

3. En su opinión ¿Es importante aprender Inglés?
a. Si   ¿Por Qué?_____
b. No

5. ¿Por qué es importante aprender inglés?
a. Para sacar mejores notas
b. Para entrar a la universidad
c. Para viajar a otro país
d. Para comunicarse con personas sordas de países de habla inglesa
e. Otra   ¿Cuál?_____

6. ¿Le gustaría aprender vocabulario y frases sencillas en inglés?
a. Si
b. No
7. De las siguientes herramientas ¿Cuáles facilitan su aprendizaje?
a. La explicación del profesor
b. Las ayudas visuales (imagenes, Presentaciones en PowerPoint,dibujos, etc)
c. Talleres escritos

8. ¿Cómo se le facilita aprender?
1. Viendo y haciendo
2. Siguiendoinstrucciones
3. Consultandoporsucuenta

4. Todaslasanteriores

9. ¿Sabe usar herramientas incluidas en el computador?
a. Si
b. No

10 Si las utiliza ¿Para qué las utiliza?
a.   Tareas
b.   Facebook
c.   Aprender algo nuevo
d.   Otra   ¿Cuál?_____

11. ¿Ha aprendido vocabulario en inglés utilizando ayudas visuales?
a.   Si
b.   No

12. ¿Le gustaría aprender vocabulario y algunas frases sencillas en inglés utilizando algunas
     de las herramientas incluidas en la pregunta 6?
a.   Si
b.   No

Appendix B: Need analysis questionnaire

COLEGIO SAN CARLOS IED
CUESTIONARIO
CONOCIMIENTOS DE INGLÉS DE LOS ESTUDIANTES CON LIMITACION AUDITIVA
(Imagestakenfromgoogleimages)

1.   Match (Une con una línea la imágen con la oración que corresponda en inglés)

The <u>elephant</u> is big

The <u>telephone</u> is ringing
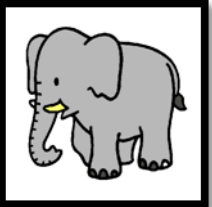
This is a <u>bycicle</u>

My <u>mom</u> is beautiful

The <u>baby</u> is happy

Complete with the vowels

II. (A las siguientes palabras en inglés les faltan las vocales. Escribelasvocales en laslíneas)

a –e –i- o-

My f__m__ly is big

The fl__w__r is beautiful

A h__sp__t__l is very important
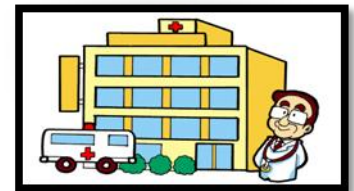
The g__r__ff__ is yellow

3. Rearrangethelettertowritewords in English (Las letras de estas palabras están en desorden. Organízalas para encontrar una palabra en inglés)

My (enp)_____is blue

This is a number (oen) _____

The (nus) _____shines
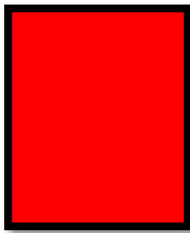
Some apples are (dre)_____

I like this (dgo) _____

Appendix C: Consent format

Bogotá, Julio 31 de 2014

Señores:
Padres de familia
Colegio IED San Carlos
Ciudad
Ref: Consentimiento informado

Reciban un cordial saludo.

Actualmente se está iniciando un proceso de investigación encaminado a brindar herramientas de aprendizaje de vocabulario y frases simples en inglés, para que los estudiantes con limitación auditiva del grado sexto, séptimo y octavo de nuestra institución tengan acceso a este idioma. Dicho proceso se desarrolla como parte del proyecto de la Maestría en Didáctica del Inglés con énfasis en ambientes de aprendizaje autónomo que se está cursando en la Universidad de la Sabana.

El desarrollo de este proyecto estará liderado por los licenciados Johanna Andrea Fraile, Claudia Esperanza Sánchez, Juan Andrés Ducuara, los dos últimos quienes se han vinculado a la investigación como parte de la propuesta de la Secretaria de Educación en alianza con la Universidad de la Sabana para mejorar los ambientes de aprendizaje del inglés en los colegios públicos de Bogotá.

Por tal motivo se solicita la autorización para que su hijo(a) participe voluntariamente en el proceso de aplicación y recolección de información del material seleccionado; grabaciones, encuestas, entrevistas, cuestionarios virtuales y físicos y ejercicios a través de software educativos, necesarios para el buen desarrollo de la investigación antes mencionada. Dichas actividades se desarrollarán 3 días a la semana, en horario de 10:00 a.m. a 12:00 p.m., durante los meses de septiembre y octubre de 2014.

Es necesario aclarar que durante toda la investigación se mantendrá total confidencialidad de los nombres de los estudiantes y de los datos que de su participación se puedan recolectar; igualmente, que estas actividades no tendrán ninguna incidencia en sus calificaciones.

Agradecemos la atención prestada.

_____
Johanna Andrea Fraile
C.C 52718172

Autorizo
_____
C.C _____

_____
Claudia Esperanza Sánchez
C.C 52.201.837

_____
Juan AndresDucuara
C.C. 80.142.559

Appendix D: Field notes format

Lesssonnumber ___		
Date:	**Topic:**	
Key Words	**Writing up**	**Analysis**
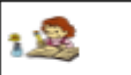
Appendix E: Progressive tests

Index =>

Matching exercise

Match the items on the right to the items on the left.
Check

		RAISE YOUR HAND
		SIT DOWN
		COME TO THE BOARD
		WORK IN PAIRS
		WRITE
		PAY ATTENTION
		WORK IN GROUPS
		STAND UP
		ANSWER THE QUESTION

Appendix F:Midterm test

Appendix G: Final term test

FINAL TERM TEST

Name: _____ **Grade:** _____

Hello;

1. **Match** the picture with the phrase

Silence

I watch TV

Raise your hand

I am sad

Please

Go to bed

I am bored

I have breakfast

Hello

I drink water

1. **<u>Organize</u>** the sentences: look at the picture

Example:

works - My mom -at the office

<u>My mom works at the office</u>

In the school - I - play soccer

_____

Study - I - in San Carlos School

_____

eat- I - all breakfast

_____

at night- I - watch T.V.

_____

Water- I- drink

_____

I-English- learn-

_____

Appendix H: Video recorded interview

Entrevista- Final del proceso

Con esta entrevista queremos saber su opinión acerca del curso de Inglés y sobre el material y metodología utilizados. Conteste sinceramente. Gracias.

Participantes: 20 estudiantes con limitación auditiva

Días: Marzo 11, 12 y 13 de 2015

Lugar: salón 9, Colegio IED San Carlos

Servicio de interpretación: JeisonMartinez

Tiempo estimado: 10 minutos por entrevista

1. ¿Qué te pareció el curso de Inglés?

2. ¿Por qué asististe al curso de Inglés?

3. ¿Para qué te sirvió el curso de Inglés?

4. De las actividades realizadas en clase, ¿Cuál fue la que más te gustó?

5. De las actividades realizadas en clase, ¿cuál fue la que más se te facilito?

6. Las imágenes usadas en la clase ¿para qué te sirvieron?

7. ¿Te gustaría seguir estudiando Inglés?

Appendix I: Lesson planning

Lesson plan. Class No. 4

Name of teachers: Johanna Andrea Fraile, Juan Andres Ducuara and Claudia Esperanza Sánchez Morales	
Institution: Colegio San Carlos I.E.D.	
Class/grade: Students with hearing impairments	**Room**: 18
Number of students: 20 Students	**Average age of Students:** 12 – 17 years old.
Date of the class: September 9th, 2014	

Tittle of the lesson: Professions.

Objectives: The students identify new vocabulary related to professions.
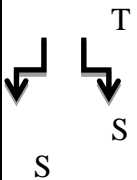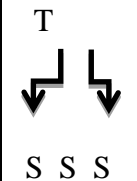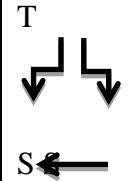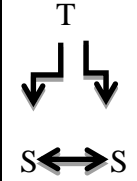
- Students will be able to associate pictures with the noun of the professions.

- The students will complete sentences with the name of the profession.

- The students will complete exercises in Hot Potatoes application.

Previous lessons:

In the previous lessons the students have identified some vocabulary related to the personal information with some basic grammar concepts about the use of the personal pronouns such as (I, He, She, and They) and the use of the verb to be in first and third person of singular.

Anticipatedproblems	PlannedSolutions
Lack of vocabulary	To teach at the beginning of the lesson the vocabulary to work in class.
Misunderstanding of instructions.	Write instructions in a piece of paper to show them and students can follow the instructions.
Difficulty to do online exercises	To download the activities in a *USB* drive to save in the laptops in case of Internet problems.
Lack of knowledge to use technological tools.	In previous lessons tutors explained the use of the application. Additionally, teachers will monitor the student's activities.

Stages of the lesson:

STAGE	AIM	ACTIVITY	TIME
Engagement Activity	To show students models with the name of the profession in English.	Teacher will show students some models related to professions (Appendix 1) to identify in a meaningful way the profession with the name in English.	5 Min
Pre- Stage	To Identify the professions and the written English word.	Teacher will display a Power Point Presentation (Appendix 2) with different pictures related to professions and consequently the English word. Students will identify the vocabulary (professions) and write it in the notebook.	10 min
While- Stage	To link image of the professions with short sentences.	Teacher will give students pieces of paper with images of the professions and pieces of papers with short sentences about the profession (Appendix 3) For example, *Margarita is a nurse.* Students will link the image with the corresponding sentence.	1 5 Min
Study	To identify the structure of a sentence using the vocabulary related to profession.	Students will receive a sentences cut into words and a matching picture. They will unscrambled the words to make a sentence in front of the corresponding image, following the examples given in the previous exercises. (Appendix 4).	20 Min

VISUAL AIDS SUPPORTING VOCABULARY LEARNING

Post-stage	To do J-Match exercise in Hot potatoes application.	The student will associate the picture with the name of the profession in Hot potatoes application using J-Match exercises (Appendix 5)	S⟷S S⟷S
Homework	To reinforce vocabulary at home on their own.	Students will receive a piece of paper with a link to reinforce vocabulary related to professions. Retrieved from: http://enjoyenglish.free.fr/english/primaire/concentration/adjectives1/adjectives1.htm	

Appendix I.1   Models of professions

Appendix I.2   Power Point Presentation
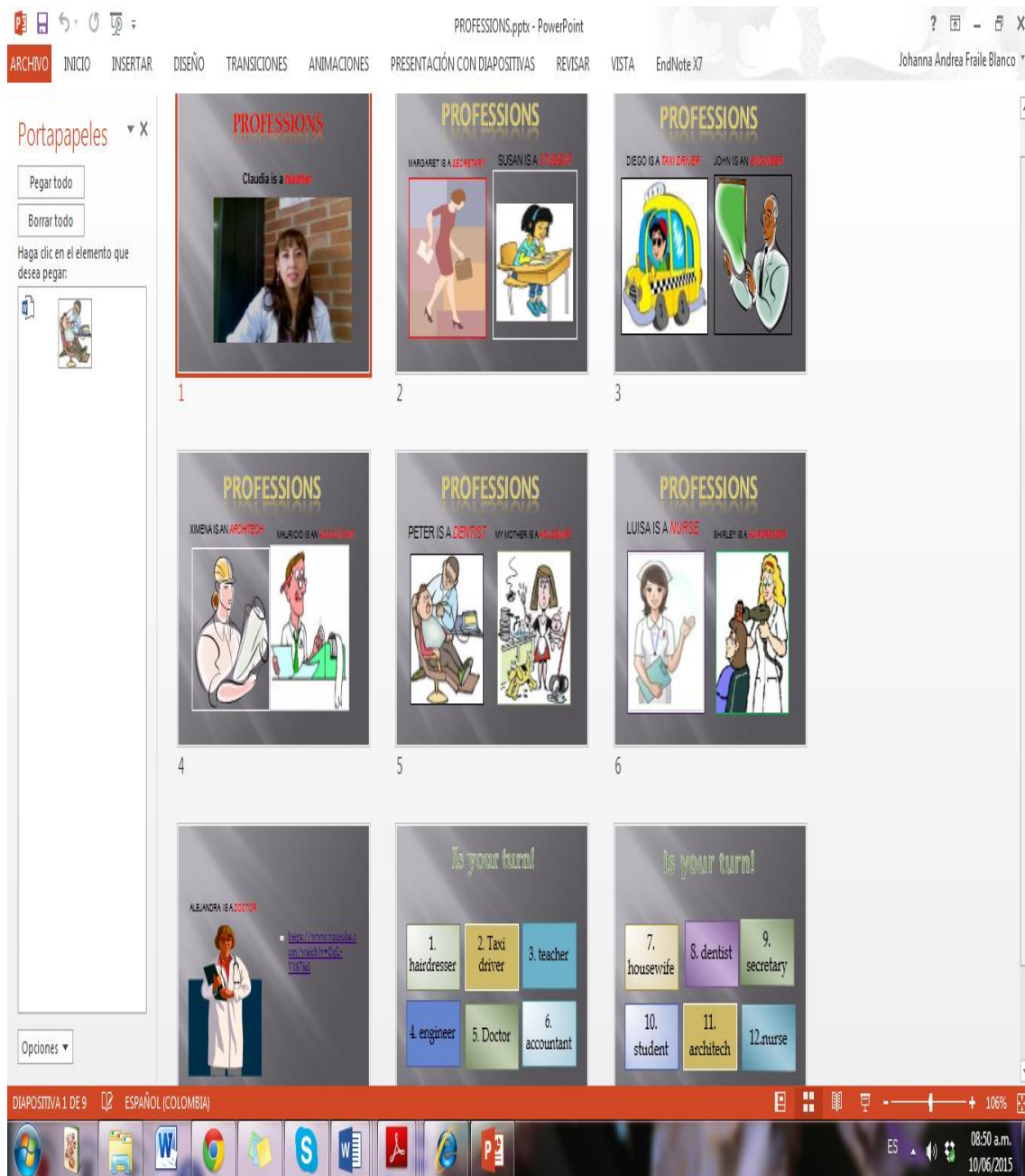
Appendix I.3 Maching Exercise

	Maria is a secretary
	Paola is a student
	Juan is a dentist
	Luisa is a housewife
	Diego is a taxi driver
	Tatiana is a nurse
	Patricia is a doctor
	Johanna is a hairdresser
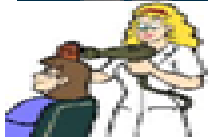
Appendix I.4 Unscrambled the sentences

DENTIST	JUAN	A	IS

HAIRDRESSER	JOHANNA	IS	A

IS	MY MOTHER	A	HOUSEWIFE

IS	A TAXI DRIVER	A	DIEGO

A	STUDENT	IS	PAOLA

A	DOCTOR	PATRICIA	IS

Appendix I.5 Hot potatoes exercise

Index ->

PROFESSIONS

Matching exercise

Match the items on the right to the items on the left.

Check

??? ▼

??? ▼

??? ▼

??? ▼

??? ▼

??? ▼

??? ▼

??? ▼

Appendix J: Hangout

Material: Dominoe

ADJECTIVES	I am fat		I am thin
	I am tall		I am short
	I am Young		I am old
	I am happy		I am sad
	I am strong		I am ugly
	I am tired		I am angry
	I am beautiful		I am handsome
	ADJECTIVES		

Appendix K: Online task

Session two: Adjectives for personal description

Retrieved from: http://enjoyenglish.free.fr/english/primaire/concentration/adjectives1/adjectives1.htm
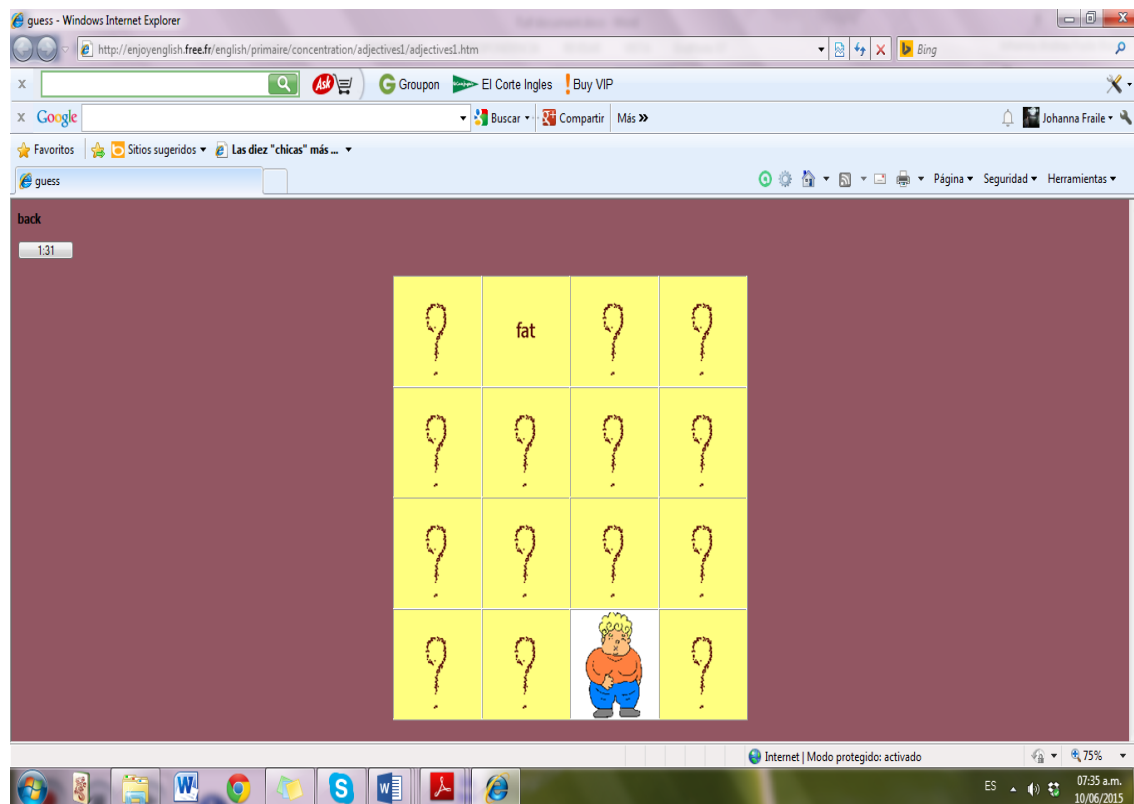
Appendix L: Coding

Coding process stages

Research Question: To what extent might learning activities assisted by visual aids promote the learning of basic daily vocabulary in English in students with hearing impairments in a public institution?	
CodingStage	**Analysis**

Open coding	*1. Category A:*Enhancement learning vocabulary
	Subcategories:
	     Involvement while supporting each other when developing
	     the activities.
	     Struggle when dealing with sentences.
	     Vocabularylearningimprovements.
	     Recallvocabulary.
	     The use of the technological tool as an assistant in learning process.
	2. Category B: Promoting basic Learning Skills
	 Subcategories:
	     Preferences for visual learning style.
	     The role of students' first language as support of their learning
	     The use of non-verbal communication in English lessons
	     supported by body language.
	3.Category C: The assistant of visual aids.
	Subcategories
	     The learning activities were related to students' needs and learning
	     Visual aids allowed the association between written words
	     and images.
	     Activities related to Identification, classification and association.
	     The designed learning activities assisted by visual aids
	     addressed basic cognitive skills
	4.Category D: Evidence of personality variables and attitudes related to intrinsic
	           motivation.
	Subcategories:
	     Attendance at the different activities in the opposite shift.
	     The level of participation in the activities of the class.
	     Collaborativework.
	     The level of satisfaction to complete the activities.

Axial Coding	**Main Category 1:** Visual aids as an effective tool to learn Basic English
	    vocabulary.
	Subcategory 1:support for attainment of new English lexicon
	Subcategory 2: Educational support emerged from using visual aids
	     Instructional material designed and implemented by the teacher

	Firstlanguagesupport
	Peer support
	***Main category 2:*Evidence of students with hearing impairments higher intrinsic motivation towards English learning.**
	    Subcategories:
	    Personalityfactors
	        Risk-taking
	        Self-esteem
	    Attitudes
	        Enhancement
	        Satisfaction

Selective coding	*Core category:* Visual aids to foster basic English vocabulary learning and intrinsic motivation of students with hearing impairments towards English language.