



Mohamed Khider University of Biskra
Faculty of Letters and Languages
Department of Foreign Languages

MASTER THESIS

Letters and Foreign Languages

English Language

Sciences of the Language

Submitted and Defended by:

Khadidja Mesmoudi

On: 13th September 2020

THE IMPACT OF E-LEARNING PROGRAMS ON DEAF AND HARD OF HEARING LEARNERS IN TEFL SITUATION

**The Case of Deaf and Hard of Hearing Students of the Center of Young
Deaf Learners at Biskra**

Dissertation submitted to the Department of Foreign languages in partial fulfilment of the requirements for the Degree of **Master in Sciences of Language**

Board of Examiners:

Dr. Triki Manel	Biskra	
Dr. Turki Barket	Biskra	Supervisor
Mrs. Bendahmane Messaouda	Biskra	

Academic Year: 2019_2020

Declaration

I, MESMOUDI Khadidja, hereby declare that all the information in this document has been carried and presented in accordance with academic rules and ethical conduct. I worked on my own and I used only the sources mentioned in the reference list and it has been read and approved by my supervisor Dr. Turki Barket. This research project has not been submitted before to any other institution or university for a degree.

This work was carried out and completed at Mohamed KHEIDER University of BISKRA, ALGERIA.

Certified:

Miss, MESMOUDI Khadidja

Dedication

It would be impossible to thank everyone who has made either a direct or indirect contribution to this research project. However, there are several individuals whose influence and help warrant some special recognition in a special way. My hearty

felt appreciation to my parents **LAKHDAR** and **DJAMILA** for their tremendous support, continuous feedback, and words of encouragement and my supportive brothers **ABDELBASSET** and **HOUCINE**

My lovely sisters **KALTHOUM** , **BOUTHEINA** AND **MAROUA**

My angels **DJIHANN**

The sweet and funny twins **DJANNA** AND **MOHAMMED**

My dear grandmother Mama **SAFIA**, who will never be with us anymore

My special thanks, respect and gratitude to Mr. **SEKEL SLIMAN** my best Boss

for his help and support in every step I have taken

Thanks to people who always gave their unconditional love

and encouragement along this year

Lastly I appreciate all friends and connectors whom supported me all along the five years journey and I owe them a great deal in my life.

Acknowledgments

First and foremost, my most gratitude to **Allah** for giving me the will, strength and health to complete this work.

I would like to express special thanks and most sincere gratitude to my supervisor Dr. TURQUI Barket for his valuable advice and encouraged support throughout developing this research.

Genuine and sincere gratitude goes for the respectable members of the jury who have accepted to give time to read and evaluate this humble work; namely, Dr. TRIKI Manel and Mrs.BENDAHMANE Messaouda.

My deep thanks go; also, to all employees of the CYDL, special thanks to the English teacher who gives us the chance to carry out our experiment in his sessions.

I send my heartfelt thanks to students of fourth year middle school of CYDL who took part in this study, who never hesitated to honestly participate to serve the progression of the study and catered the suitable environment where the study has been practiced successfully. This research would not have been completed without the contribution of those wonderful students; your efforts are highly appreciated. Thank you for your collaboration in this work and wish you all the best

Lastly, I would like to express my appreciation to everyone who helped me to accomplish this work.

Abstract

Foreign language learning poses a number of challenges that vary according to a wide range of variables. The additional difficulty confronting Deaf and Hard of Hearing (D/HoH) learners is not being able to depend entirely on the auditory channel as a means of linguistic information. Moreover, learning foreign language nowadays is not facilitated by suitable learning media, particularly in special needs context. Therefore, teaching English as foreign language (TEFL) for D/HoH individuals represents an issue worth investigation and displays many challenges to researchers in the field. Therefore, the present study addressed an educational innovative technique represented by an online computer program as a technological supplementary for delivering instructional materials. Mainly, this paper presents the results of a study aimed at evaluating the efficacy of using E-learning programs in TEFL for learners of signed language (SL). Thus, the hypothesis suggested examining this study set out that the E-learning materials is an efficient method of teaching English language to D/HoH students, additionally; they would display positive attitudes towards the implemented method. Within the scope of the present study, the theoretical and practical frameworks are outlined to discuss the assigned method with regard to its implemented procedures. Methodologically, a Quantitative Approach was adopted, in relevance; two data collection methods were used, namely tests and a questionnaire. After the interpretation of the collected data, it was found that the stated hypotheses has been confirmed that the implemented program is an effective method of E-learning that positively contributes in promoting D/HoH learners SL achievement.

Key words: E-learning, Deaf and Hard of Hearing learners, TEFL, Online computer program, Sign language.

List of Abbreviations and Acronyms

ASL: American Sign Language

ASL Pro: American Sign Language Production

BSL: British Sign Language

CALL: Computer Assisted Language Learning

CS: Cued Speech

CYDL: Center of Young Deaf Learners

dB: Decibels

D/HoH: Deaf and Hard of Hearing

E-learning: Electronic Learning

FSL: Foreign Sign Language

IDEA: Individuals with Disabilities Education Act

LD: Learning Disability

SEN: Special Educational Needs

SL: Sign Language

SPSS: Statistical Package for the Social Sciences

TEFL: Teaching English as a Foreign Language

WHO: World Health Organization

List of Appendices

Appendix 01: The Ethical Research Approval from the Department Administration

Appendix 02: The Ethical Research Approval from Directorate of Social Solidarity and Women's Issues

Appendix 03: Pre-test

Appendix04: Post-test

Appendix05: Students' Questionnaire

Appendix06: Students' Questionnaire: Piloting Stage

List of Tables

Table2. 1: Summay of Informal Assessment for D/HoH Learners	32
Table3. 1: Timeline Table of Treatment Sessions.....	56
Table3. 2: Students Scores before Using ASL Pro	60
Table3. 3: Students Scores after Using ASL Pro	60
Table3. 4: Descriptive Statistics of Students Scores before and after Using ASL Pro	61
Table3. 5: Paired Sample <i>t</i> -Test, Pre-test and Post-test	61
Table3. 6: Age Distribution.....	63
Table3. 7: Gender Distribution.....	64
Table3. 8: Participants' Degree of Hearing Loss	65
Table3. 9: Participants' Use of Hearing Aids	66
Table3. 10: Participants' D/HoH Relatives.....	67
Table3. 11: What Tools Participants Rely on in their Studies	71
Table3.12: Students Challenges during English Sessions.....	72
Table3. 13: Participants' Use of Computer Internet	75
Table3. 14: Participants' Opinions on Using Technology /Computer programs in FLL	76
Table3. 15: Participants' Perception on Learning with New Methods and Materials	78
Table3. 16: Participants' Perspectives, Aims and Wishes	81

List of Figures

Figure1. 1: Degrees of Hearing Loss.....	10
Figure1. 2: Hearing Loss Related to the Structure of the Ear.....	11
Figure1. 3: Expanding the Concept of Inclusion	15
Figure1. 4: ASL Finger Spelling Alphabet	22
Figure1. 5: BSL Finger Spelling Alphabet.....	23
Figure1. 6: Cues of a Lip-pattern Consists of Three Sounds "p-m-b"	25
Figure2. 1: An Example of an Online Video Dictionary of SL Instruction	41
Figure2. 2: HandSpeak Home Page	42
Figure2. 3: Signing Savvy Home Page	42
Figure2. 4: Spread the Sign Home Page.....	43
Figure2. 5: SignMaker 2017 Home Page	43
Figure2. 6: Signing Online Home Page.....	44
Figure2. 7: ASL Pro main Dictionary	45
Figure2. 8: ASL Pro Home Page.....	45
Figure3. 1: Learning Vocabulary Using ASL Pro from the Chosen Word List.....	57
Figure3. 2: Learning Simple Conversational Phrases Using ASL Pro from the Chosen List.	58
Figure3. 3: Score Comparison between Pre-test and Post-test.....	62
Figure3. 4: Age Distribution	63
Figure3. 5: Gender Distribution	64
Figure3. 6: Participants' Degree of Hearing Loss.....	65
Figure3. 7: Participants' Use of Hearing Aids.....	66
Figure3. 8: Participants' D/HoH Relatives	67
Figure3. 9: Participants' Motivation toward English Language	68
Figure3. 10: Participants' Communication Options	69

Figure3. 11: Participants' Degree of Understanding the Teacher.....	70
Figure3. 12: What Tools Participants Rely on in their Studies.....	71
Figure3. 13: Students' Challenges during English Sessions.....	73
Figure3. 14: Participants' Attempts to Overcome their Challenges	74
Figure3. 15: Participants' Use of Computer Internet.....	75
Figure3. 16: Participants' Opinions on Using Technology /Computer Programs in FLL.....	76
Figure3.17: Participants' Perception on Learning with New Methods and Materials.....	78
Figure3. 18: Participants' Views toward the Application of ASL Pro.....	79

Contents

Declaration	I
Dedication	II
Acknowledgments	III
Abstract	IV
List of Abbreviations and Acronyms	V
List of Appendices	VI
List of Tables.....	VII
List of Figures	VIII
Contents.....	X

General Introduction

1.Statement of the Problem	1
2.Research Questions	2
3.Research Hypothesis	2
4.Aims of the Study.....	3
5.Research Methodology.....	3
5.1.Research Approach	3
5.2.Research Design.....	4
5.3.Data Collection Method	4
5.4.The Data Collection Procedures.....	4

5.5.The Data Analysis Procedures	4
6.Population and Sample.....	5
6.1.Sampling Techniques	5
7.Significance of the Study	5
8.Structure of the Dissertation.....	5

CHAPTER ONE: DEAF PEOPLE AND SPECIAL EDUCATION

Introduction	8
1.1.Deafness and Types of Hearing Loss	9
1.1.1. Degrees and Types of Hearing Loss	9
1.1.1.1.Conductive Hearing Losses.....	10
1.1.1.2.Sensorineural Hearing Losses	10
1.1.1.3.Mixed Hearing Losses.....	11
1.1.1.4.Central Hearing Losses	11
1.2.Special Education and Deaf Learners	12
1.2.1. An Overview on Special Education.....	12
1.2.2. Issues in Special and Inclusive Education	14
1.2.3. Deaf and Hard of Hearing Learners.....	16
1.2.4. Identifying Student with Hearing Impairment	17
1.3.Educational Trends for Deaf learners.....	17
1.3.1.Educational Trends in the United States of America	18
1.3.2.Educational Trends in the United Kingdom.....	19
1.4.Language and Communication.....	19

1.4.1. Defining and Understanding Sign Language	20
1.4.2. American Sign Language	22
1.4.3. British Sign Language	23
1.4.4. Cued Speech	24
Conclusion	25

CHAPTER TWO: FOREIGN LANGUAGE AND E-LEARNING

Introduction	27
2.1. Foreign Language Education	27
2.1.1. English as a Global Language	28
2.1.2. Deaf Learners and Foreign Language Status	29
2.1.3. Deaf and Hard of Hearing Learners of English	30
2.1.3.1. Educational Assessment of Deaf and Hard of Hearing Learners	31
2.1.3.2. Teaching Learning of English through Signs	32
2.1.4. Challenges in Learning English as a Foreign Language	34
2.2. An Overview on E-Learning	35
2.2.1. History of E-learning	36
2.2.2. E-learning Current Trends and Future Scenario	36
2.2.3. E-learning Environment for Deaf and Hard of Hearing Learners	37
2.2.3.1. Deaf-centered E-Learning Environment	38
2.3. Computer-based Learning Programs	39
2.3.1. Computer Assisted Language Learning	39
2.3.2. Online Sign Dictionaries	40

2.3.3.ASL Pro as a Computer Program	44
Conclusion.....	46

CHAPTER THREE: FIELD WORK AND DATA ANALYSIS

Introduction	48
3.1.Research Methodology.....	48
3.1.1.Research Approach	49
3.1.2.Research Design	50
3.2.Population and Sampling.....	50
3.3.Instruments	51
3.4.Data Collection Methods.....	51
3.4.1.Tests.....	52
3.4.1.1.Structure and Aims	52
3.4.2.Questionnaire.....	53
3.4.2.1.Aim.....	53
3.4.2.2.Structure and Content.....	54
3.4.2.3.Piloting and Validation.....	55
3.4.2.4.Administration.....	55
3.5.The Treatment Implementation	56
3.6.Data Analysis	58
3.6.1.Section One: Pre-test and Post-test Scores Analysis.....	59
3.6.2.Section Two: Analysis and Interpretation of the Participants' Responses	62

3.6.2.1. Interpretation of the Questionnaire's Results.....	81
3.7. Summary of Results	84
3.8. Pedagogical Implications and Recommendations	86
Conclusion.....	88

General conclusion

List of References.....	91
-------------------------	----

Appendices

ملخص

General Introduction

Hearing is one of the five senses, it is the ability to perceive sound by detecting vibrations via an organ which is the ear. Varying degrees of disabilities related to hearing (from mild loss of hearing to total deafness); people with limited hearing may be referred to as hearing impaired and may be described as Hard of Hearing, while those with no hearing are usually referred to as Deaf, majorly caused by a wide range of biological and environmental factors. Thus for Deaf learners, learning foreign language represents a daily challenge.

Teaching English to D/HoH students is one of the compulsory challenges, since English is the world's lingua franca today; it has become extremely important for people to communicate on a worldwide scale with others. Some work has been made in designing instructional resources and strategies to insure that D/HoH learns English as accessible as possible in the TEFL context. For severely and profoundly Deaf people, learning a foreign language is clearly a different process from the ways in which hearing people develop language. They do have many reasons for learning as their hearing peers, many of them learning foreign language for academic purposes and some for economic reasons or simply they are fascinated by the wish of studying languages. However, it is typically necessary to engage in learning Foreign Sign Language (FSL) for those learners Special educational needs (SEN) in formal classes designed to suit the educational needs of Deaf learners. Additionally, there is also proof that studying a FSL can act as a bridge to learning a spoken language from the same area.

1. Statement of the Problem

Learning a foreign language by Deaf people is the area which has become challenging for its incomplete findings. Actually, it is a difficult task for these learners to find suitable

materials for their learning needs. Especially for SL learning, for that there are still several unanswered questions waiting for further investigation. The fact that the D/HoH learners are subjected to the same curriculum, teaching methods and materials that the hearing pupils in regular schools follow, this may be unfair because those programs may not fulfill in some aspects their needs due to their disability.

This problem is fundamental because as long as the D/HoH learners comply with the same procedures and programs as their normal peers, they will continue to fail in examinations and this affects their educational progress. Therefore, their case requires special attention and additional instructions and materials to cover their special needs.

2. Research Questions

This research seeks to answer the following research questions:

- 1) What strategies are used in teaching English as a foreign language to D/HoH learners?
- 2) What are the conditions for learning English as foreign language, when teaching D/HoH learners?
- 3) What is the impact of using E-Learning programs on D/HoH in TEFL situation?

3. Research Hypothesis

Based on the above research questions, we propose the following research hypothesis:

- We hypothesize that if D/HoH learners are provided with a suitable learning environment using assistive technology they will learn English as a foreign language adequately.

4. Aims of the Study

In this study, it is important to:

- Provide insights into D/HoH learning needs, their motivation and the challenges they face in foreign language learning.
- Investigate the strategies and materials, which may facilitate the learning process for D/HoH students instead of using only SL instruction.
- Find out the impact of E-learning programs on D/HoH learners in TEFL situation.
- Find new insights and thoughts from the D/HoH learners towards the use of E-learning programs as a motivational material.
- Look for better quality of learning and teaching students with SEN.

5. Research Methodology

5.1. Research Approach

In order to verify to what extent the proposed hypothesis is valid and correct, we opted for a quantitative approach for this research, by collecting quantitative data and interpreting it descriptively. The purpose of using the quantitative method is to offer the analysis a more comprehensive understanding, which is held under the investigation of "the efficiency of implementing an E-learning program on D/HoH learners". It aims at obtaining data from the experienced learners. Accordingly, to enrich the researcher's ability in drawing conclusions about the problem under study.

5.2. Research Design

In order to carry out the present study, we have implemented a quantitative research design wherein a case study is described through a before and after research design. As the present study deals with inquiring an E-learning program and its effects on a small-scale study, the case study is selected as a feasible mean to the data collection method. Thus, the researcher feasibly tends to use quantitative research strategy to develop the analysis and to provide clearer links between different methods and collected data.

5.3. Data Collection Method

The researcher, in this study, will opt for a pre-test and post-test, as well as a questionnaire to answer the research questions. The pre and the post-test are used to assess the learner's knowledge of attainment. For the questionnaires, it will be also used to obtain feedback on the learners' perceptions of using the ASL Pro Sign instructional program.

5.4. The Data Collection Procedures

The researcher will invite the participants in this study to take the pre-test before the treatment sessions then a post-test after the treatment sessions by arranging sessions with a fixed time to determine their attainment level, and for the questionnaires, it is distributed at the end of the study.

5.5. The Data Analysis Procedures

The researcher will use descriptive statistics to describe and summarize the data quantitatively.

6. Population and Sample

To accomplish our research, we have selected fourth middle school level students at the Center of Young Deaf Learners (CYDL) at Biskra (École des jeunes sourds EJS), as a population. The whole population is 16 students, therefore; the whole number of students have volunteered.

6.1. Sampling Techniques

The number of students who have volunteered in the participation in this research are 16 students. Therefore, we opted for small-scale study because of the limited number of the participants and a purposive sample that it is known to be representative.

7. Significance of the Study

In the last few decades, the view of Deaf education has changed in most societies. There has been a great deal of research into the education of D/HoH students. The term “D/HoH” indicates a cultural group of people with learning differences that needs a special and different supplemental education continuously; this study is to call attention to the obstacles which influence the foreign language learning process because of the learning materials. Moreover, the research work attempts to evaluate and eventually implement an E-learning program as remedy to the problem.

8. Structure of the Dissertation

This dissertation will be divided into two main Parts, the theoretical and the practical part. First, the theoretical Part contains two main chapters. The first chapter will be devoted to give an overview about Deaf people and special education; it displays a theoretical background of people with SEN in general and D/HoH people in specific and their education.

The second chapter is initiated by providing an inclusive theoretical background about foreign language and E-learning and D/HoH challenges in learning English.

In like manner, the practical part constitutes the third chapter which will be devoted to analysis and discussion the data obtained through the used data collection methods. To explain more, the assigned chapter discusses the data analysis and procedures of conducting the research, namely; the pre and post-test and the submitted questionnaire. The former method targets to elicit the students' perceptions and attitudes toward the implemented program. This dissertation is concluded with a set of pedagogical implications and recommendations.

Chapter One

Deaf People and Special Education

Introduction

Life does not give a warrant to live without disability; it may happen at any time to any people. “Types of disability are defined using only one aspect of disability, such as impairments sensory, physical, mental, intellectual and at other times they conflate health conditions with disability.”(World Report on Disability, 2011, p. 22). Deafness has been known since ancient times as a social and psychological problem, but Deaf people faced many historical difficulties; they were considered as useless persons for humanity. Nowadays the views about those Deaf people differ in how they are treated, communicated with and most importantly educated. According to the World Health Organization (WHO) “Over 5% of the world’s population or 466 million people have disabling hearing loss (432 million adults and 34 million children). It is estimated that by 2050 over 900 million people or one in every ten people will have disabling hearing loss” (2019).

Growing numbers of D/HoH people have problems with education, the idea of continuing successfully their educational career becomes in some cases impossible for many Deaf learners, which creates a great educational attainment gap between Deaf people and their hearing peers especially in learning foreign languages.

Generally, this chapter also provides a rational explanation for the current case study, with special attention to the different types of hearing loss. In addition, it demonstrates the importance of special education as an effective strategy to facilitate the learning process of special educational needs and the common issues that may be faced in. Lastly, the present chapter discusses the question language and communication and the sign language used in Deaf community.

1.1. Deafness and Types of Hearing Loss

Before introducing the different types of Hearing Loss, it is important to be well aware of what is meant by Deafness. According to Cambridge Dictionary Online, Deafness is simply “the quality of being unable to hear, either completely or partly” (2019). Hard of Hearing refers to “someone who doesn't hear well. This may be because they were born with a hearing loss or they may have lost some or all of their hearing later in life.” (Hearing Loss Association of America, 2019)

The Individuals with Disabilities Education Act (IDEA) defined Deafness and Hearing Impairment separately. Deafness is defined as “a hearing loss which adversely affects educational performance and that is so severe that the child is impaired in processing linguistic (communication) information through hearing or without amplification”. Hearing impairment is defined by IDEA as “an impairment in hearing, whether permanent or fluctuating, that adversely affects a child’s educational performance.” (2004)

1.1.1. Degrees and Types of Hearing Loss

Hearing loss classified into categories according to its degree, as stated in the National Dissemination Center for Children with Disabilities (NICHCY), hearing loss or hearing impairment is generally described as slight, mild, moderate, severe, or profound, depending upon how well a person can hear the intensities or frequencies most strongly associated with speech as shown in Figure 1.1. Impairments in hearing can occur in either or both areas, and may exist in only one ear or in both ears. Generally, only children whose hearing loss is greater than 90 decibels (dB) are considered deaf” (2010).

NICHCY (2010) also mentioned that “before we describe the types of hearing loss a person may have, it’s useful to know that sound is measured by its loudness or intensity

(measured in units called decibels, dB); and its frequency or pitch (measured in units called hertz, Hz)”.



Figure1. 1: Degrees of Hearing Loss (University of Calgary, 2018)

According to NICHCY (2010), there are four types of hearing loss as follows:

1.1.1.1. Conductive Hearing Losses

Are caused by diseases or obstructions in the outer or middle ear, and it usually affects all frequencies of hearing evenly and do not result in severe losses. A person with a conductive hearing loss usually is able to use a hearing aid well or can be helped medically or surgically.

1.1.1.2. Sensorineural Hearing Losses

Result from damage to the delicate sensory hair cells of the inner ear or the nerves that supply it. These hearing losses can range from mild to profound. They often affect the person's ability to hear certain frequencies more than others do. Thus, even with amplification

to increase the sound level, a person with a sensorineural hearing loss may perceive distorted sounds, sometimes making the successful use of a hearing aid impossible.

1.1.1.3. Mixed Hearing Losses

Refers to a combination of conductive and sensorineural loss and means that a problem occurs in both the outer or middle and the inner ear.

1.1.1.4. Central Hearing Losses

Result from damage or impairment to the nerves or nuclei of the central nervous system, either in the pathways to the brain or in the brain itself.

The following figure demonstrates Hearing Losses related to the structure of the ear:

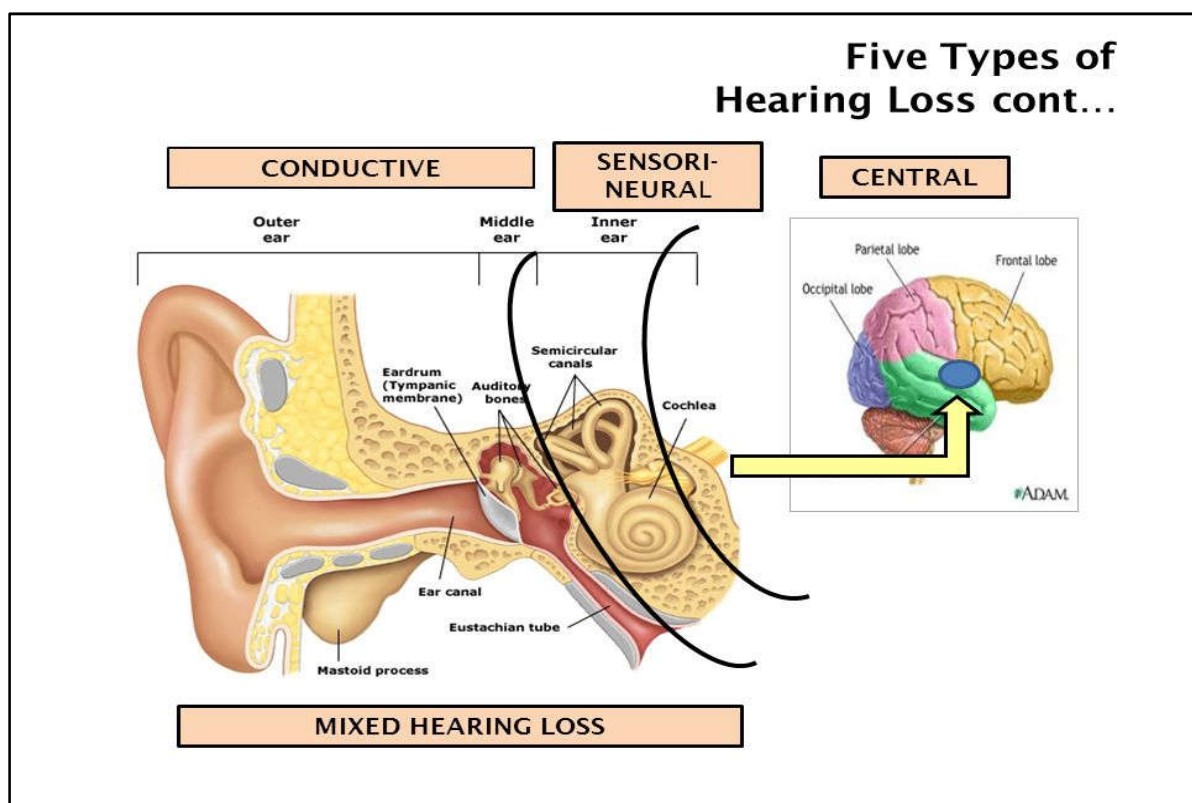


Figure1. 2: Hearing Loss Related to the Structure of the Ear (Brittney Andra Brooks, 2013)

1.2.Special Education and Deaf Learners

1.2.1. An Overview on Special Education

One of the most important goals of education is to make sure that all educators whatever their differences are provided with a complete, accurate and a practical knowledge. However; it is not an easy task for teachers to teach a number of learners with different abilities including learners with SEN. There is a variety of inclusive teaching strategies that can support all students to learn but there are some specific strategies that are beneficial in teaching a group which consist students with special needs.

As a result, Special Education or Special Instruction may represent the solution for learners with Disability. “In the US, the governing federal law is the IDEA. Under this act, special education is defined as: specially designed instruction, at no cost to the parents, to meet the unique needs of a child with a disability.” (Watson, 2019), Specially Designed Instruction (SDI) is designed to ensure access to the general curriculum through modifications so that the student can meet the same academic standards as his/her nondisabled peers and to ensure progress (Central Ohio Special Education Regional Resource Cente)

In 1975, the U.S. Congress passed the first bill for children with disabilities, called the *Education for All Handicapped Children Act*, which has subsequently been renamed the *Individuals with Disabilities Education Improvement Act* (IDEA 2004). However, in adopting the initial version of the act, many state public educational systems excluded children with physical disabilities and impairments (for example, children who were deaf, blind, or physically handicapped), and children with learning disabilities (LD) and emotional disabilities, from special education services.(Linda and Alan W, 2010, p7)

The reader may wonder what special about Special Education for student with LD, since they deal with the same curriculum as their normal peers; Vaughn and Linan-Thompson state that: “What should be special is the delivery of instruction, given that their needs are rarely met through general education instruction alone. Students with LD benefit from explicit and systematic instruction that is closely related to their area of instructional need.” (2003, p. 145)

The quality of special education depends on the degree and the nature of disability, special courses must be designed to meet the needs of learners with special needs, prepared by special and trained teachers using special teaching methods and tools followed by supporting services that encompass their situation. According to Alothman, 2014 Special educational programs can be categorized as follow:

- Few number of student in each class which is provided with trained teachers and special materials.
- Resource rooms for students with special need because they require special care, where teachers discuss with them their needs, giving advices or supporting them doing their homeworks.
- The Itinerant and Counselors Program which gives support for both teachers and students with special needs and even parents.

In brief, Special education is a broad term considered as a branch of education designed for variety number of learners with different types of disabilities and difficulties concerns with teaching and supporting all kinds of special learners.

1.2.2. Issues in Special and Inclusive Education

Through the years since the passage of the IDEA there have been a number of issues especially concerning inclusive education. When the U.S. Congress passed the law, they mandated that children be served in least restrictive environment. Despite the fact that special education gains in providing special services and appropriate education for special needs since they are concerned with school related problems or problems related to learning in a wider sense, however; the results were not that much satisfactory for it became in some cases similar to regular education. The idea of inclusion and integration of disabled student is slowly becoming close to general education goals. Pinantoan defined inclusion as an educational practice whereby students with special needs are fully integrated into the general education classrooms at a school, however; mainstreaming is defined by a special needs child who visits the general class for certain subjects, but is not fully integrated. (2013)

Inclusion or integration can be considered as a preferred model of education by the Deaf community that assimilates children with hearing impairment, this kind of education has stimulated much debate in how education should be, according to Professor Roger Slee, Dean of McGill University's Faculty of Education, who spoke to the Advisory Board on English Education about his experience as an education reformer stat that " inclusion should be a combination of three components: access (getting the students back into the classroom), engagement, and success."(Beauchamp, et al., 2006, p05). Here is a pyramid classification that describes the idea of inclusion which become wider by accessing mainstream curriculum for children with SEN.

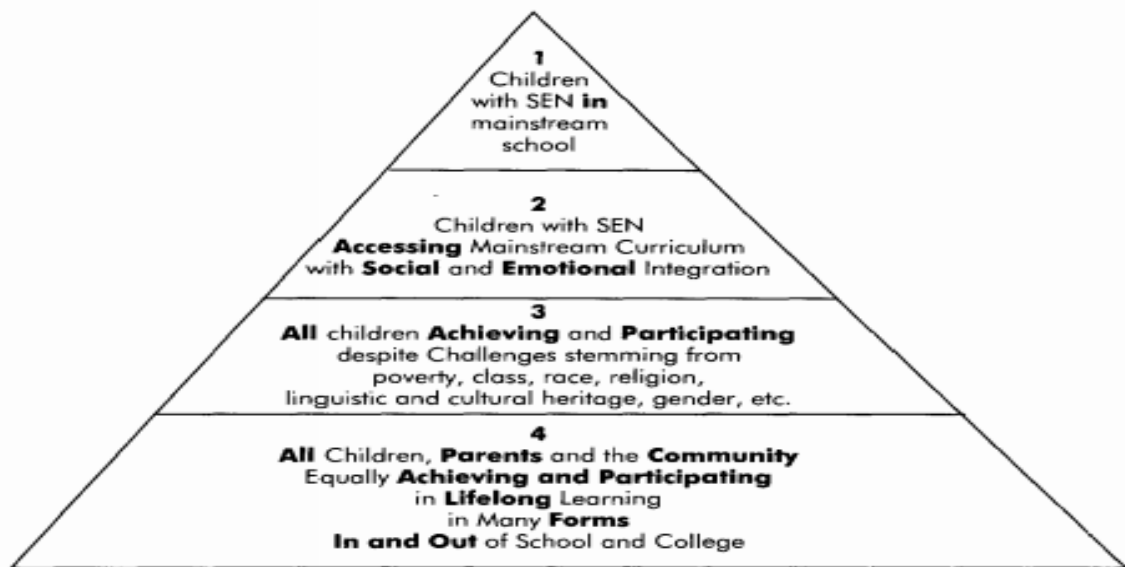


Figure1. 3: Expanding the Concept of Inclusion (Turiainen, 2018)

Most children with SEN ended up in separate schools or even private schools, those schools mostly look at the child's ability to have success in regular education environment before considering the child being moved into some other setting, so that the child can not function successfully in regular education without support. Peel (2004) argued that "within an inclusive education setting, the educational focus is on how best to accommodate the needs of individual learners within a classroom setting rather than forcing the individual to conform to the educational environment, which may be highly unsuitable to their particular needs." (p.13)

Beauchamp, et al (2006) also claimed that a part of the problem was the separation of education between normal and special children, both in schools and in educational colleges. Giving prospective teachers an understanding of issues of disability, culture, race and class problems demands that students during their entire teacher-training program learn about these topics.

Marion and Neelima (2015) claimed that the whole concept of inclusive education is lost because the teachers, parents, society and classmates lack proper attitude and awareness and of trained teachers, the lack of a large class and child-centered and appropriate

curriculum, the lack of adequate teaching materials, in addition to the deficiency of accessing to the main stream; actually about 4 or 5 percent of children with special needs out of 30 million have access to education and most schools are not willing to meet the needs of these students.

In order to be able to cope with all the problems, it is necessary to raise people's awareness and to focus on providing knowledge. It is important to look for an alternative plan and solution, Marion and Neelima (2015) also proposed a number of recommendations and strategies for inclusive education as follow:

- To coordinate training programs for all teachers to provide them with competencies.
- Researchers should be welcomed as they are the main innovators in the classroom using a variety of methods such as discussion, participatory exercises, role playing.
- Preparation of child-centered learning material.
- Parent education initiatives as the majority of them are not aware of the problem they face and how to help them. Many learners with greater difficulty may choose to initially study at home by supplying them with learning materials, audio visual or working kits.

1.2.3. Deaf and Hard of Hearing Learners

Many people with hearing disabilities do not have equal chances in health services, education and business opportunities; they do not even obtain the right of related disability services which is designed to enable a student to benefit from special education instruction and general education curriculum (e.g., Speech and Language, Nursing Services, Occupational Therapy, Physical Therapy, Counseling).

Therefore, if a child does not need special education there can be no related services. D/HoH people experiencing challenges mostly in education since they cannot enroll in ordinary school setting, they struggle with literacy and encounter lifelong problems in finding a job.

1.2.4. Identifying Student with Hearing Impairment

In order to identify students with hearing disability, parents must be aware of their children at early age; children with hearing impairment may be affected in their development, performance, and face difficulties in understanding the world. Niemann, Greenstein and David (2004) as cited in Dolly and spec describes the impact of a hearing impairment where a child can see people talking but cannot understand what is being said. This results in the child having difficulties understanding the world and in expressing personal needs, resulting in limited interactions and social isolation. Sometimes hearing impairment may be unnoticed for many years when the degree of hearing loss is so mild, consequently; students with hearing impairment will have disadvantaged educational situations,

Dolly and spec (2014) also consider the case of a student with unnoticed mild hearing loss. Sue a young girl with undiagnosed conductive hearing loss and mild hearing impairment in the left ear. She thought that her friends whispering a lot and faced difficulty in following their conversations and most of the times she would often have to ask her friends to repeat themselves, at home she was always ask for turning up the sound level of the TV or sit near to it to hear perfectly. Without adult awareness, her impairment continued unrecognized.

1.3 Educational Trends for Deaf learners

The inability to hear does not just affect hearing, hearing loss can affect many other aspects of a student's life; it can obviously affect the child's development of literacy and academic achievement. Many students who are D/HoH are able to succeed at mainstream

setting when they have the appropriate services and accommodations, D/HoH learners have at least motivation to learn and educate as their hearing peers. Louise (2004) argued that the education of Deaf learners in the entire world was directly influenced by the educational trends in both the United States of America and the United Kingdom regarding educational inclusion.

1.3.1 Educational Trends in the United States of America

Since 1950's the debate over residential school program in the United States of America has been continuous toward full inclusion, by placing all children with disabilities in their neighborhood schools with the necessary support services. Deaf education was almost exclusively conducted in separated residential schools, which encouraged the formation of separate culture (Deaf Culture), and a shared language (SL), which was one of Alexander Graham Bell's beliefs, he also opened a training school for teachers of the Deaf in Boston in 1872, which taught educators in the use of lip-reading and speech skills. During 1970's schools for the Deaf adopted the philosophy of Total Communication and the number of Deaf teachers dropped, this was due to the belief that Deaf teachers are poorly suited to speech-centered methodologies. (Louise, 2004)

A conference was held in Salamanca, Spain June 1994 and was sponsored by UNESCO and the Ministry of Education and Science of Spain, which examined the state of special needs education. The change in the education law now meant that Deaf learners could be placed in the education facility best suited to them which included residential schools for the Deaf, day schools, classes in regular schools and placement in mainstream schools which had support from itinerant teachers of the Deaf. (ibid)

1.3.2 Educational Trends in the United Kingdom

In the United Kingdom, Deaf children were educated in segregated educational institutions until 1947, after which they were included into partial hearing units, which were linked to hearing schools. This movement led to Deaf people being recognized as being independent, self reliant, valuable members of society. In 1970 the Education Act stated that all children should be educated in local schools, regardless of disability. Just as the education of Deaf learners in the United States of America was influenced by the 1978 Warnock Report which changed the term ‘handicapped’ to ‘learners with special needs’ which defined all learners with individual educational needs. One of the most important areas of this report was the recommendation that provision for special education, wherever possible. This report promoted integration of all learners into regular classes including those with SEN, in 1997 the United Kingdom government decided on a policy of inclusion for all learners, after they declared their support for the Salamanca Statement. (Louise, 2004)

1.4 Language and Communication

For the majority of students with normal hearing, language and communication are mastered naturally; students with hearing loss may need additional support and direct instruction to develop language and communication skills. A simple definition of communication is the act of transmitting information, including ideas and emotions by using different channels of communication, “through communication, needs, feelings, desires and ideas are expressed, information is given and received through communication and in this way one establishes one’s own identity” (Wambui, 2015, p. 15). In a broader view, people can include in addition to verbal language their hands and eyes during their communication acts. Chomsky (2006) in his intervention about language asked “what contribution can the study of language make to our understanding of human nature...the nature of language the respects in

which language mirrors human mental processes or shape the flow or character of thoughts.”
(p. 1)

According to the Commission of Deaf, DeafBlind and Hard of Hearing “language is central to the human experience. Communication is essential for social and academic progress. It is important to consider that the unique nature and consequences of hearing loss indicate that students who are Deaf or Hard of Hearing have a common need for communication access as well as individualized need areas” (Anderson, et al., 2015, p. 5). Language and communication can be challenging in certain situations especially when a child has a hearing loss, sometimes parents or even the surrounding people feel frustrated with the difficulties of communication mainly because of trying to get their attention or for they could not understand. It is majorly known that D/HoH people have a lot of difficulty to understand in noise since they rely heavily on visual information.

Being Deaf creates dilemmas. You are isolated from the hearing world. Yet you have to live in a hearing world that does not know your language. Communicating with other sign users is easy; communicating with those who do not sign is difficult. Lip-reading does not help much, and you may even be seen as clumsy because you violate conversational norms of the hearing world. (Goss, 2003, p. 6)

1.4.1 Defining and Understanding Sign Language

Body language, eyes and hands are mediums used by Deaf people to express different feelings, share ideas and to facilitate the communication process. Plato, Cooper and Hutchinson (as cited in Abdelouafi, 2018) state that “if we hadn’t a voice or a tongue, and wanted to express things to one another, wouldn’t we try to make signs by moving our hands, heads and the rest of our body just as dumb people do at present?”(p. 3) SL is the preferred language used by Deaf people, which is majorly based on gestures; it can be developed within

any given Deaf community that may exist. Actually it is important for those unfamiliar with SL to highlight the difference between natural signed languages and artificial signed languages.

Senghas & Monaghan (2002) assert that: “for sign languages the hands and body (including face) are used to encode both lexical forms and grammatical relationships. The use of these visible (rather than audible) articulators allows signers to use three dimensional spaces in complex linguistic ways and gives sign languages a unique quality not shared with spoken languages.” (p. 74).

Natural Sign Languages are languages unconsciously invented, Klima, Bellugi and Foley as cited in Senghas and Monaghan (2002) noted that Linguists today generally accept natural sign languages as complex, grammatical structures with all of the key components similar to other human languages. However; artificial signed languages are languages designedly created, “it is developed in many countries, often as pedagogical tools for teaching spoken languages to Deaf individuals, though sometimes intended as a primary means of signed communication in and of themselves” (ibid)

The characteristics of SL are summarized in the following points mentioned by (Brentari, 2010)

- They are used by Deaf people.
- They are considered nonverbal- communication.
- They differ from country to country.
- Sign languages are linguistically complex
- Sign languages use different finger spelling around the world which classified into:

- a) One handed finger spelling e.g. Spain, Russia, Ireland ,France, The United States of America (as shown in figure 1.4)
- b) Two- handed finger spelling e.g. Turkey, Newzeland and Britain (figure 1.5)

1.4.2 American Sign Language

Deaf people in spite of their inability to hear and speak, they can sign, make movement, write and read they can make themselves understood, according to the National Institute on Deafness and other Communication Disorder (NIDCD) “American Sign Language (ASL) is a complete, natural language that has the same linguistic properties as spoken languages, with grammar that differs from English. Movements of the hands and face express ASL. It is the primary language of many North Americans who are D/HoH, and is used by many hearing people as well.”(2019), the following figure shows the ASL finger spelling alphabet (also referred to as the American manual alphabet) used to spell out proper names and English words:

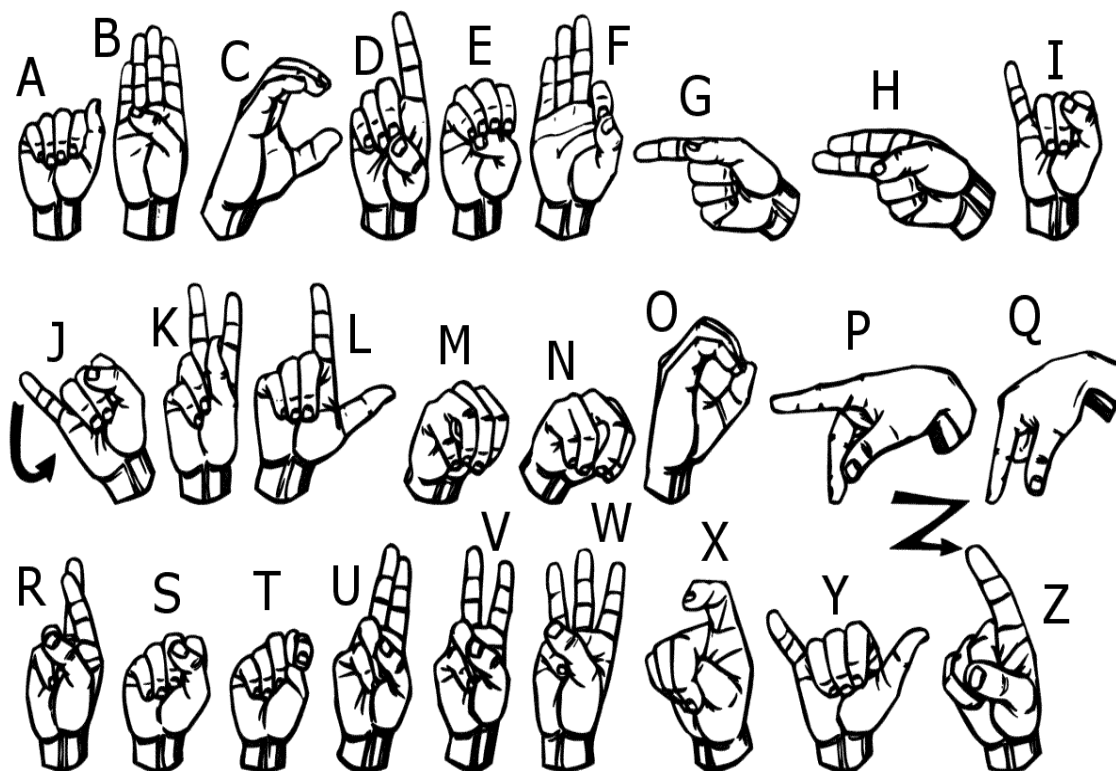


Figure1. 4: ASL Finger Spelling Alphabet (Vicars, n.d)

1.4.3 British Sign Language

The form of SL used most commonly within Britain is British Sign Language (BSL); it has its own grammatical structure and syntax, as a language it is not strongly related to spoken English. The Sign Community (2013) mentioned that by the late 1980s, the SL used by Deaf groups in Britain was considered a simple series of signals and pantomime, whereas Deaf children's parents were encouraged not to allow their children to use signs or gestures. It was thought to prevent them from developing speaking and lip-reading skills, it is also estimated that “over 120,000 Deaf adults and about 20,000 children in the United Kingdom use BSL to communicate with other people”(ibid)

The following figure shows the BSL finger spelling alphabet:

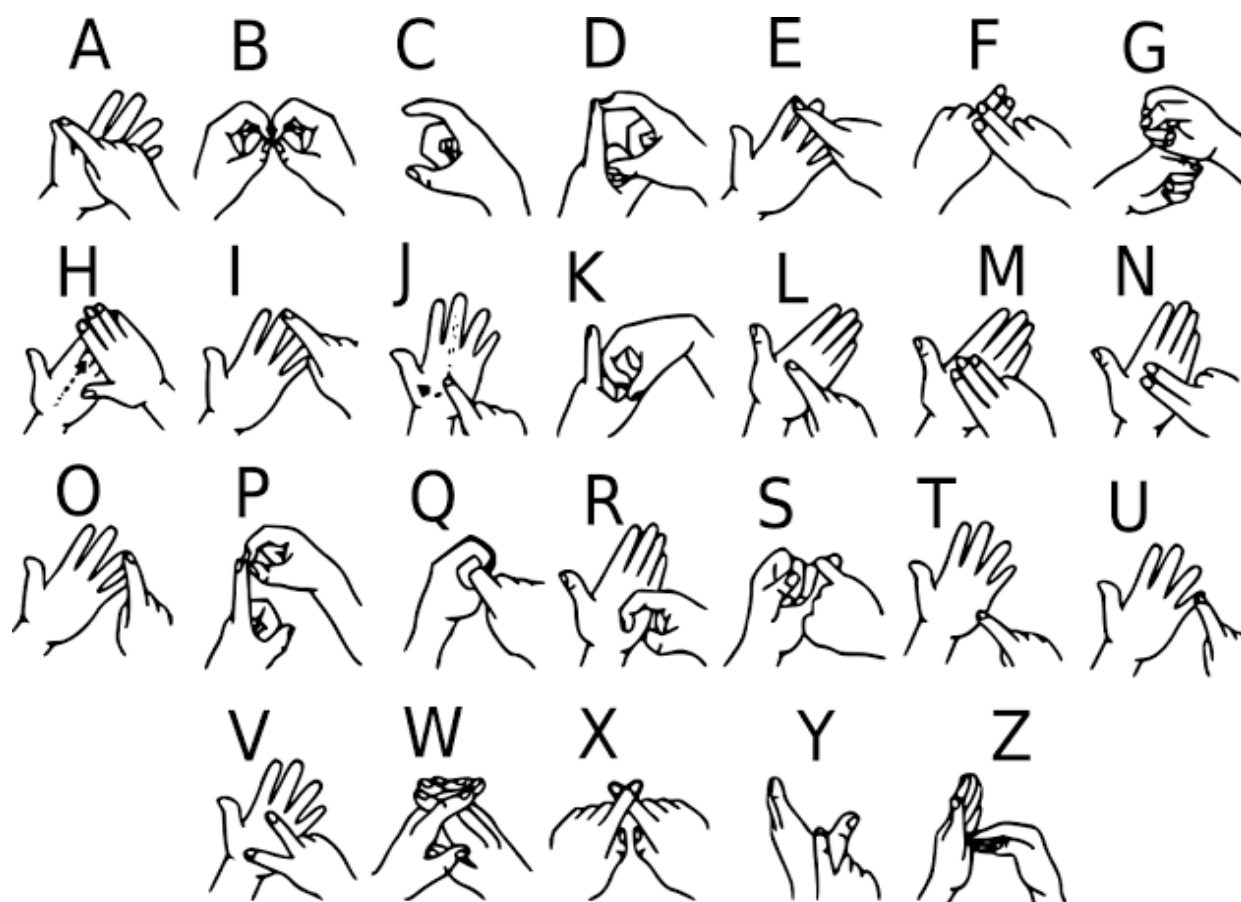


Figure1. 5: BSL Finger Spelling Alphabet (masadeh, n.d)

1.4.4 Cued Speech

When we speak, many of the lip-patterns are the same for different sounds. This makes English impossible to lip-read accurately. Cued speech (CS) is highly effective modes of communication for people who are D/HoH or who have a language disorder, it is easy to learn and most importantly, it provides a full visual access to spoken language for people who are unable to hear or process auditory information effectively. The National Cued Speech Association (NCSA) defined CS as “a visual mode of communication that uses handshapes and placements in combination with the mouth movements of speech to make the phonemes of a spoken language look different from each other.”(2019)

Leybaert, Aparicio and Alegria (2016) explained how to practice CS:

In CS, the speaker complements lip gestures of speech with manual cues. A cue is made up of two parameters: handshape and hand location around the mouth. The American English form of CS uses eight handshapes corresponding to groups of consonants and four hand locations to convey vowels and diphthongs. Phonemes that are distinguishable by lip-reading are coded by a same handshape (like /p/, /d/, and /zh/) or at the same location..Each time a speaker pronounces a consonant–vowel syllable, a cue (a particular handshape at a specific position) is produced simultaneously. (p. 2)

Therefore, CS is a simple system that supports lip-reading and designed to make the whole word visible not just the sounds since it is considered as a life changing benefits for many D/HoH students.

The following figure shows the process of cuing lip-pattern consists of three sounds “p – m – b” using hand-shape:



Figure1. 6: Cues of a Lip-pattern Consists of Three Sounds "p-m-b" (cued speech learning, 2017)

Conclusion

In conclusion, this chapter tackled a preliminary introduction to Deaf community and provided a discussion of the main concepts related to Deafness. It presented essential background information on terminology related to the causes, types, and degrees of hearing loss, as well reporting a clear explanation on special education and Inclusive learning and the issues of such mode of education special needs people face and described the D/HoH learners. Accordingly, it provides information about two differing educational trends for Deaf learners. Moving to the last element discussed in this chapter, it highlights the aspect of language and communication by exploring the differing communication modes available to Deaf learners.

The following chapter is an attempt to present and discuss foreign languages in relation to D/HoH learners following their challenges and the use of E-learning programs to address those challenges.

Chapter Two

Foreign Language and E-Learning

Introduction

It is a popular remark among experts in the field of special education that given the enormous development of computer communication networks and, in particular Internet services and facilities, nothing has been done to facilitate the usage and penetration of such network systems in the field of foreign language education. E-learning is a valuable resource that has proven to make studying simpler for people across the globe. Yet there is a need to render E-learning accessible to the D/HoH foreign language learners particularly English language learners since it is the most important foreign language.

The following chapter, partly, discusses the purpose behind conducting the present study. It sheds light on foreign language education in connection to D/HoH context, their case in learning English as a foreign language as well as their challenges. It presents also an interpretation of E-learning as a method of teaching and learning. To start with, it supplies a clear overview on E-learning. Next, it provides a description of the varied applicable use of computer-based learning programs. Henceforth, it analyses the applicability of learning languages within Computer-Assisted Language Learning (CALL), particularly for D/HoH learners. Finally, it addresses the available online sign dictionaries, which provide innovative and efficient tools that help in learning FSL easily.

2.1.Foreign Language Education

Most schools around the world teach at least one foreign language and most colleges and high schools require foreign language before graduation. “Language as a subject matter is highly protean; it has been defined in various ways in schools, usually as a reflection of predominant images of teaching and learning, language is also in, of and for the world” (Freeman & Larsen-Freeman, 2008, p. 147). Moeller and Catalano (2015) mentioned that

language is considered foreign if it is studied primarily in the classroom and is not spoken in a culture where it is taught. The learning of another language allows individuals to communicate effectively and creatively and to engage in real-life situations through the vocabulary of authentic culture itself.

The mastery of reading, writing, and oral communication is essential for success in all areas of studying a foreign language. It helps to understand people from different cultures think differently, it makes people more open minded and accepting of others. Moeller and Catalano (2015) also defined foreign language education as “the teaching of a modern language that is neither an official language nor the mother tongue of a significant part of the population.” (p. 327)

2.1.1. English as a Global Language

Over the centuries English has grown from the language of a relatively small area England into a global language used by most communities in the world, many countries use English as their second language. Despite the difficulties in studying English, it is significant to study the language for it plays a fundamental role in dominant fields of life such as communication, commerce, economy, politics, education, science, technology and so on. Therefore, “why a language becomes a global language has little to do with the number of people who speak it. It is much more to do with who those speakers are.” (Crystal, 2003, p. 7)

According to Lyons “There are around 7.5 billion people in the world, 1.5 billion speak English — that's 20 percent of the Earth's population. Nevertheless, most of these individuals are not native speakers of English. Approximately 360 million people speak English as their first language. Besides being commonly spoken, English is by far the most

widely studied international language in the world, accompanied by French at a distant second.” (2017).

Crystal (2003) also insisted that a language achieves a genuinely global status when it develops a special role that is recognized in every country. No language has ever been spoken by a mother tongue majority in more than a few countries (Spanish leads, in this respect, in some twenty countries, chiefly in Latin America), So mother-tongue use by itself cannot give a language global status. To achieve such a status, a language has to be taken up by other countries around the world. They must decide to give it a special place within their communities. (pp. 3.4)

Therefore, a language exists only in its consumer's minds, mouths, ears, hands, and feet. If they succeed their language succeeds on the international stage if they fail, their language fails too. (Crystal, 2003)

2.1.2. Deaf Learners and Foreign Language Status

It is common to find individuals with the ability to speak many languages around the world. There are many D/HoH adults at schools, who hope to be able to learn foreign languages, and there are also Deaf individuals who are inspired to learn languages, but their opportunities are far from optimal. Kontra (2017) accounted that “A Deaf person will want to communicate with hearing foreigners as well, will want to watch foreign movies with foreign subtitles, read foreign papers or websites, and access information written in a FL”(p. 37). So the Deaf learners' learning of the majority language is motivated by the power of integrative motivation, motivation to learn a language can affect the learning process. (Martin 2009)

Kontra (2017) also mentioned that a retrospective reports were built on the basis of a range of interviews with a sample of Deaf and severely Hard-of-Hearing teenagers. They

were adopted by the National Institute of Research and Technology between 2006 and 2010 painted a varied picture of their language-learning experiences at school, with lots of hardships, frustration, and disappointment, but interestingly enough.

Martin (2009) also indicated that the degree of hearing impairment is one of the key factors determining the peculiarities of the process of language acquisition and indeed language learning. For instance, according to the degree of hearing loss, some hard-of-hearing individuals can use their residual hearing to process auditory input. The advances in amplification technology have the power to put the hard-of-hearing and the hearing person on an equal footing. (p 32)

Kontra and Kormos pointed out that the formal supported oralist method in Deaf education leaves the foreign language teacher insignificant room for experimentation with underlying different approaches. So teaching foreign languages to the Deaf has no special developed methodology (2008). However; Brartha and Hattyar (2002) as cited in Kontra and Kormos (2008) stated that “in state education there are doubts about whether foreign languages should be taught to Deaf people at all, and student with a hearing impairment are often exempted from foreign languages classes”(p. 158).

2.1.3. Deaf and Hard of Hearing Learners of English

In today's world, learning English, which is a lingua franca, is worthwhile and plays an important role for all people including Deaf people. Berent and Clymer as cited in BiGRiNCi (2014) explained the necessity of learning English for Deaf students stating that “In non-English-speaking countries the numbers of Deaf students entering post-secondary degree programs at colleges and universities are rapidly increasing. Due to the prominent role of English as an international language, students must satisfy English language course

requirements in order to develop the skills to access English-language academic materials.”

(p. 2)

2.1.3.1. Educational Assessment of Deaf and Hard of Hearing Learners

Special education offer supporting academic services for Deaf learners after providing profs on educational development or on the learners' needs, these profs can be obtained through an assessment process which should be conducted by trained specialist. A well-done educational assessment plays an important role in monitoring learning and diagnosing learners with LD, however; language assessment of students who are Deaf may represent a challenge, Pizzo and Chilvers assumed that Deaf children often use a wide variety of languages and/or communication systems in their home, school, and community, which makes assessing language proficiency difficult. For example, the language of instruction, language of socialization, and language of the home may all be different for a Deaf child. (2019)

Generally, assessment can be categorized into two types; informal and formal assessment for D/HoH learners. Informal assessment contains basically seven main approaches which are not related to standards samples of written or oral language, Pizzo and Chilvers (2019) summarized them in the following table:

Approach	Definition
Naturalistic Assessment	Assessment that focuses on observing children in their natural environments.
Play-Based Assessment	Assessment that focuses on observing children in authentic play scenarios.
Performance-Based Assessment	Assessment techniques that require children to perform a specified skill based on a combination of age, grade, or questions about a child's

	learning to demonstrate learning.
Curriculum-Based Assessment	Assessment techniques that require children to perform a specified skill based on the unit, chapter, or lesson being taught to demonstrate learning.
Standards-Based Assessment	Assessment techniques that require children to perform a specified skill based on the state or common core standard being taught to demonstrate learning.
Portfolio Assessment	Assessment that uses a targeted selection of children's work and relevant assessment data to document a child's learning.
Dynamic Assessment	Approach that uses a test, teach, test again approach as a way of evaluating which instructional strategies may be effective for a specific child.

Table2. 1: Summay of Informal Assessment for D/HoH Learners (Pizzo and Chilvers, 2019)

In formal assessment, teachers usually relay on psychological measurements. Pizzo and Chilvers also stated that formal testing utilizes psychometrics to construct a test with the capacity, validity and reliability to separate specific skills and to equate the success of the child with other children and to be sure of the scores made, the test must be performed the same way every time it is given. (2019)

2.1.3.2. Teaching Learning of English trough Signs

Teaching English to D/HoH students is a richly satisfying opportunity, but also represents a big challenge in finding a suitable approach and an effective teaching tool to cope with teaching English to Deaf students. The research confirms that linguistic isolation, the

lack of Deaf-appropriate teaching strategies, and an over-dependence on teacher aides who have limited experience are the main barriers to success amongst children who are deaf (McKee, 2003)

Li, Peng, Liu, Booth, and Ding (2013) describe a study on congenitally Deaf signers compared to hearing control individuals citing by a number of researchers like Shand, (1982); Morford et al., (2011) and Mayberry et al., (2011). Shand (1982) presents proof that Deaf learners equate written terms with unique signs in their short-term memory bank. Growing research suggests that reading in Deaf people may depend on connections to the brain networks involved in interpreting SL. Behavioral tests have found signals that present for Deaf people through written word processing, and that SL interpretations of written words were allowed even when a function did not involve the use of SL directly. In fact, Deaf students are more likely to become good students because they put a solid base of SL into the cycle of reading.

Hermans, Knoors, Ormel, and Verhoeven agreed that certain Deaf students use written terms to identify signals. They noticed that Deaf children with greater sign vocabulary often had greater written vocabulary. They hypothesize that using greater SL vocabulary makes children master written vocabulary rather than the other way around. In addition, Their reading paradigm suggests that SL may also play a role in higher-order language communication than merely sign-word association. (2008)

This may contribute the belief that studying a foreign language may be improved by using a similar SL used by Deaf people in that group. The first is that signs will provide Deaf learners with a visual language in an understandable manner and they can decipher them using the relevant signs while interpreting foreign terms in the written language.

2.1.4. Challenges in Learning English as a Foreign Language

Being able to communicate in a foreign language opens different doors for exposure to knowledge; communicate with foreigners, and more career prospects. Such options would not only be the privilege of the majority but also of others who experience learning disabilities. In light of this little is known about how D/HoH persons learn foreign languages and what language learning opportunities are available for them at school or in adulthood. According to Falkowska (2016) as cited in Kontra (2017) “Deaf persons are bilingual even if due to the above circumstances, many of them do not reach full competence in either the national spoken language or the local sign language.”(p. 37)

Domagała-Zyśk (2016) powerfully stated that language fluency is the major challenge of deafness, and D/HoH people also have difficulties using their national spoken /written languages; in other words learning foreign languages poses a new obstacle for both Deaf learners and their teachers. It is assured that “Hearing Impirement creates a serious obstruction in the process of acquiring a new language. It is especially difficult on the situation when the level of mutual understanding of the signals transmitted visually or aurally between a student and a teacher is not sufficient.” (Domagała-Zyśk, 2012, p. 99)

Here are the main challenges and difficulties faced by D/HoH English learners according to the presented results which were obtained from a reserch conducted by Domagała-Zyśk(2012) among D/HoH Polish learners, summarized as follows:

- The studied themes present a potencial difficulty for D/HoH in the sense that they are usually difficult to be discussed even in native language.
- D/HoH usually have much poorer vocabulary even in their national language.

- Concerning students' book there are many words supposed to be learned by D/HoH without understanding their meaning precisely; like words and expressions describe different aspects of human speech, animal voices, situations and events.

- D/HoH have problems in foreign language production as they have in their national language too, in addition to difficulties to master pronunciation of the English words.

- Difficulties in remembering the exact meaning of the word or to differentiate between word types and this may be influenced by using SL.

Generally, D/HoH English learners do have such problems because of the lack of effective teaching/learning strategies, which may help them learn a new language spontaneously.

2.2.An Overview on E-Learning

In today's world, which requires more and more people to learn new knowledge and skills in an effective way, the advancement of computer and networking technologies are providing a diverse means to support learning in a more personalized, flexible manner. Capital "E" and "learning" expressed the believe that Computers, Digital Media, Digital Curriculum and the Internet are of a significant role to learning, learning which takes place as the teacher engages the students individually, interactively and through self-based work. Gathany (2012) as cited in Centre for Surveillance, Epidemiology and Laboratory Services stated that E-learning built primarily to promote distinct learning goals across a range of educational approaches; E-learning involves the learner's constructive participation and involvement in order to fulfill the expectations and accomplish the desired outcomes. (2013)

2.2.1. History of E-learning

While the term "E-learning" has become well recognized in recent years, many are still unaware of, when it first realized, what it actually means, and how it can help them achieve success. Phillips, Menaught and Kennedy stated that in the 1990s, learning applications appeared to be developed as multimedia-rich, monolithic programs, meeting learning requirements over a period, often several weeks. Among many terms, such 'courseware' was referred to as 'interactive multimedia,' 'computer-based learning', 'computer-facilitated learning' and 'interactive learning systems'. With the emergence of the World Wide Web in the mid-1990s, the production of courseware became feasible. (2012)

Many complex definitions of E-learning are circulating, according to Zhang, Zhao, Zhou and Nunamaker (2004) "E-learning is technology-based learning in which learning materials are delivered electronically to remote learners via a computer network." (p. 76) However Horton, (2001) defined E-learning as "the use of Internet and digital technologies to rate experiences that educate our fellow human beings. This definition is deliberately open-ended, allowing complete freedom as to how these experiences are formulated, organized, created, packaged, and marketed."(p. 1)

E-learning is primarily a branch of education, however it also brings in influences from other fields including computer engineering, it is also seen as a modern mode of learning that utilizes internet affordances to provide frequently interactive learning materials and services.

2.2.2. E-learning Current Trends and Future Scenario

In the past two decades, E-learning has become an important part of our educational life; it has been rising steadily in the education market. Colleges, schools and businesses have

started providing online classes to satisfy student's needs. Babu and Reddy (2015) mentioned that "E-learning is fast and easy way of teaching and learning through network technologies which gains most powerful response in the present education trend. The current work forces expected to be highly knowledgeable and skilled. It also expects that the learning process should take place continuously and acquire new skills by engaging in lifelong learning." (p. 484)

Goyal clarified that the term E-learning includes more than online instruction, as the letter "E" stands for the word "Electronic," E-learning would include all instructional practices conducted by individuals or organizations operating online or offline. The concept of E-learning is becoming very common these days, as several colleges provide degree and diploma programs via E-learning mode. Many big businesses invest in E-learning and create virtual classrooms. Thus, the day is not far away when E-learning become the world's potential common form of education. (2012)

2.2.3. E-learning Environment for Deaf and Hard of Hearing Learners

The usage of technology in education departments has become more and more important in the passing years. The E-learning system is one of the most common technical methods used in schooling, which involves a variety of groups of pupils, including those with hearing difficulties. D/HoH individuals are among people with disabilities that deserve the same right to get the best education as they can get just like normal people. Schwartz (2002) as cited in HASHIM, TASIR, and MOHAMAD (2013) stated "Hearing impaired (HI) individuals, particularly HI students, usually acquire the same level of mental capability as the normal hearing students in terms of studying. The term 'deaf and dumb' is not practically to

be used since the HI students are only lacking of their hearing capability not their intelligence.” (p. 67)

In order to provide D/HoH students with sufficient access to knowledge, the E-learning system needs to be built and designed to address the needs of D/HoH students by improving some of the features of E-learning environment. HASHIM, TASIR, and MOHAMAD concluded that the use of technology should be capitalized especially for educational purposes, not just for ordinary students, but also for students with disabilities, particularly students with hearing impairment. Their challenges with utilizing the traditional learning approach can be seen as an incentive for E-learning creators and academics to support them by designing a learning platform that might benefit them in a number of ways. The creation of every E-learning system will enable them improve their confidence and, at the same time, raise their productivity. (2013)

2.2.3.1. Deaf-centered E-Learning Environment

Reaching modern learning contexts using digital interactive technologies need appropriate language skills to navigate such resources. In the case of E-learning contexts, it is sometimes challenging teachers to assess if Deaf learners miss their assigned tasks because of their failure to cope with the content topic; or because of the barriers of limited language and literacy abilities to accessing instructions. The development of an online E-learning platform called DELE (Deaf-centered e-learning environment) has involved a significant amount of research.

According to Capuano, De Monte, Groves, Roccaforte and Tomasuolo the main principles guiding this project have been: ease of access for the Deaf learner in terms of a technology enhanced experience of the written text, visualization procedures, centered on the

fact that Deaf learners are more accustomed to gathering information visually rather than orally.(2011)

2.3.Computer-based Learning Programs

Technology exists to develop teaching materials that provides the learner a range of learning routes and approaches, a selection of visual, audio and text resources, and opportunities to be engaged with the content effectively. Wena (2011) as cited in Kadaruddin (2017) mentioned that computer-based learning is learning to use computers as a tool. In computer-based learning teaching materials are delivered via the digital media, which makes students more engaged and inspired in studying. Via computer-based instruction, students must communicate and function explicitly and independently with the computer.

According to Hackbarth (1996) "there are at least major categories of Computer-based Learning CBL: drill-and-practice, tutorial, problem solving, simulation, inquiry, electronic performance support system, testing, and programming" (p. 192). These eight categories suggest that teachers in a given learning scenario are required to choose suitable computer based learning resources focused on educational priorities or objectives. In other words, if teachers use unacceptable content, it will not be an efficient learning experience for their students. (ibid)

2.3.1. Computer Assisted Language Learning

Recently, many studies and publications have witnessed a growing interest in Computer-Assisted Language Learning (CALL), which aims to improve the quality of language teaching. Many researchers strongly believe that educational softwares can make a significant contribution towards learning languages. Badem and Akbulut (2019) stated that the implementation of the (CALL) concept has led in several respects to developments in

foreign language learning. It has made it easier for teachers and learners to expand the language learning process enhance the connection with other learning materials and giving rise to a range of opportunities.

Levy (1997) integrates the term CALL with the study of applications of computer in language teaching and learning, based on his definition of CALL, “it is the research of the application of the computer in language learning and teaching.” (p.1). Although the name concerns the computer, the word CALL covers all information, communication, and technology (ICT) software for foreign language teaching and learning. Equally important, due to the inclusion of computer systems into the field of language teaching and learning CALL has encompasses issues of technologies, modes of instruction, pedagogical theories and materials design.

2.3.2. Online Sign Dictionaries

An area of SL learning currently experiencing development is online sign courses. The inclusion of SL on the Internet will increase exposure to knowledge for Deaf Signers and enhance their educational and social opportunities. Fajardo, Parra, and Can˜as (2010) stated that the technological challenge is being effectively overcome; since technological advancements have allowed, for example, high-temporal and spatial resolution videos of SL material to be viewed on the Internet. In this context Cavaletto (2015) added “Online sign "dictionaries" are more user-friendly than printed books, usually consist of huge word lists, with definitions, usage examples, etc. They can be searched by the written language, and explained with sign language.”(p. 17)

Generally, the SL dictionary can serve many functions. Majorly, it supports the learning process of SL in special educational institutions for the D/HoH, as well as enables

normal hearing people who are in a daily contact with D/HoH people to learn and to communicate with them in the SL. In addition, a Sign dictionary can unify the meaning of signs and at the same time define a standard way of performing a sign and also somewhat fill the gap in the number of qualified SL instructors.



Figure2. 1: An Example of an Online Video Dictionary of SL Instruction (Sign Language Dictionary, 2019)

There are a number of nominated online sign dictionaries, which provide opportunities for learners of FSL to engage in self-directed activities, mentioned as follow:

a) HandSpeak: created by Jolanta Lapiak it is a content site on SL, consisting of American Sign Language (ASL) online dictionary, grammar tutorials, fingerspelling, literary arts (storytelling and poetry), ASL writing, and other features.



Figure2. 2: HandSpeak Home Page (HandSpeak, 2020)

b) **Signing Savvy:** is another online resource to use while you learn SL. It includes the ability to view signs, build word lists and share them with others, create digital flash cards and quizzes, print signs and build sign phrases.

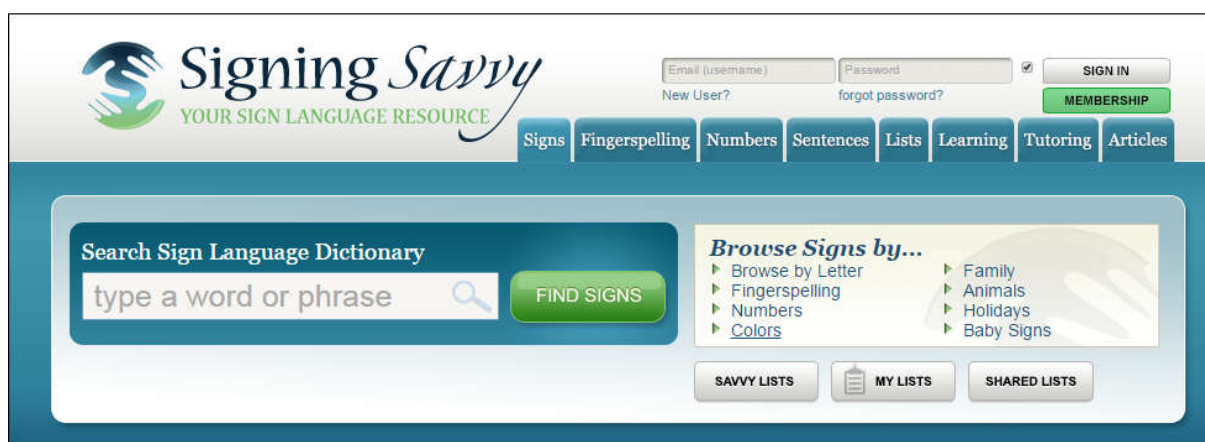


Figure2. 3: Signing Savvy Home Page (Signing Savvy, 2020)

c) **Spread the Sign:** An international video dictionary gathered suggestions of signs from different sign languages around the world as for Swedish, BSL, ASL, German, French, Spanish, Portuguese, Russian, Estonian, Lithuanian, Icelandic, Latvian, Polish, Czech, Japanese, Turkish and baby signs.

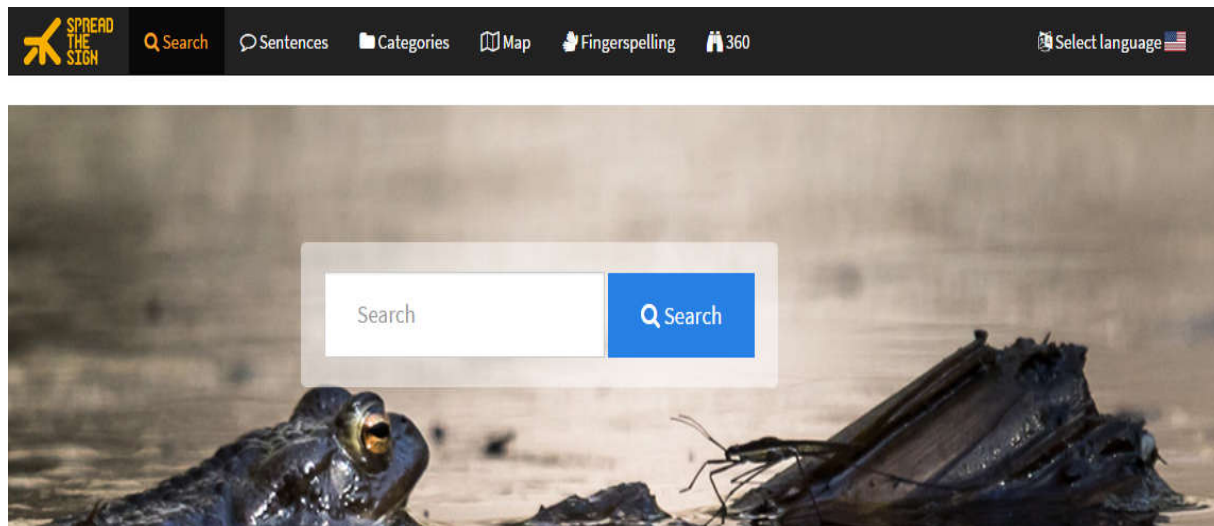


Figure2. 4: Spread the Sign Home Page (SpreadTheSign, 2020)

d) SignMaker 2017: is a standalone web application that features SignWriting TrueType Fonts and an integrated SignWriting dictionary. Dictionaries can be searched by spoken language or SL. Choosing a flag to access dictionaries from different countries, or writing your own signs and store them in your personal dictionary with or without the internet. This web application works on all devices as a web page.



Figure2. 5: SignMaker 2017 Home Page (SignMaker , 2017)

e) **Signing Online:** offering web-based courses designed with nationally and internationally recognized curriculum developed by Dr. David Stewart. It focuses on conversational signs and use videos to demonstrate the visual nature of signing designed to help you learn the SL.



Figure2. 6: Signing Online Home Page (Signing Online , 2020)

2.3.3. ASL Pro as a Computer Program

To give a person a good start to further language learning, start teaching him/her vocabulary, usually in foreign language courses teachers do not have the time to teach vocabulary especially for those with SEN. Thus, using different strategies to engage D/HoH learners in self-study of vocabulary may be an effective remedy to fill the gaps and help them to access to overhearing conversations in their environment. ASL Pro, a free online vocabulary-quizzing program, intended for use by ASL educators and their students. Potentially, a Deaf person could make use of this resource to learn ASL as an FSL if they had sufficient command of English. To our knowledge ASL Pro is the most useful and effective SL vocabulary-quizzing program prior to the current study.

This video dictionary is divided into the main dictionary, religious dictionary, conversational phrases, and a baby sign dictionary, and much more additional information is

included with each sign videos to help provide a better understanding of what the sign is, when to use it, and how to remember it. The core of ASL pro includes:

- Dictionary search the SL dictionary with thousands of high-resolution sign videos, sign descriptions.
- Learning Tools: Build vocabulary word lists, and quiz yourself with quizzing tools.
- Community: Join an expansive community of educators, interpreters, students, D/HoH friends and family members and enthusiasts of ASL.

Generally, ASL pro is helpful in providing free, easy-to-use reference and learning tools to enhance in-classroom learning for ASL educators and their students.



Figure2. 8: ASL Pro Home Page

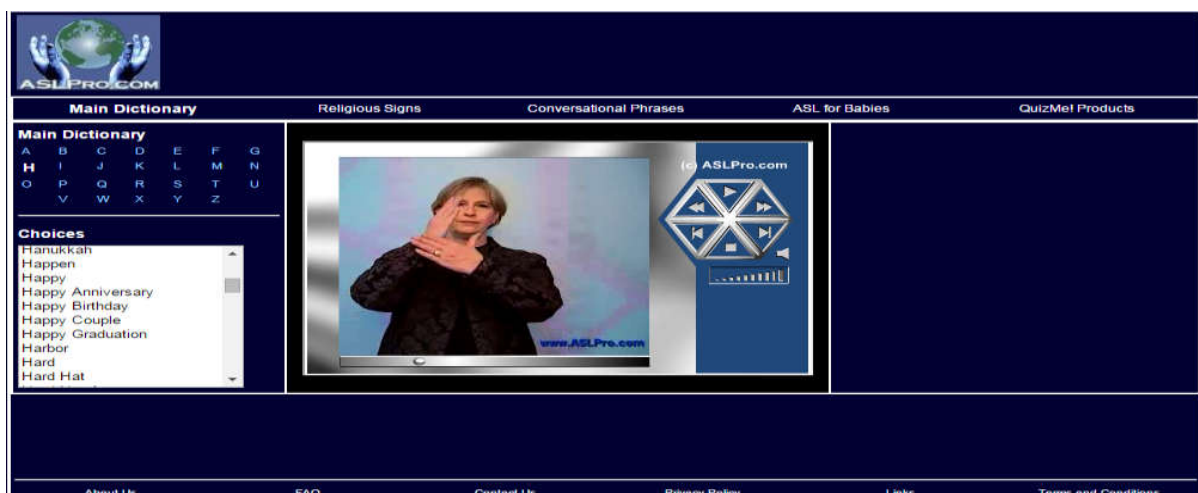


Figure2. 7: ASL Pro main Dictionary

Conclusion

To sum up, this chapter attempted to present a general overview about foreign language education in connection to D/HoH learners. Primarily, this chapter reviewed English as a foreign language and D/HoH English learner's status and teaching learning methods based on signs as well their challenges in learning English. In addition it presented a general overview about E-learning including its definition, history, current trends and future expectations and E-learning environment for D/HoH learner. At the end, this chapter focused on E-learning programs and spotted the light in computer programs that may be useful for D/HoH in learning foreign languages particularly FSL including English language.

In the coming chapter, focus will be on the practical side of this work. Data analysis will be discussed and finding and synthesis of this investigation will also be presented.

Chapter Three

Data Analysis; Field Work

Introduction

This study was conducted to reveal the impact of E-learning programs on D/HoH learners. The following chapter is devoted to the actual application of the theories into practice based on the two preceding chapters, includes data analysis and the reporting of findings. Conversely, it is also within the scope of this chapter to highlight the strategies and materials, which may facilitate the learning process for D/HoH instead of using only SL instruction, and to show that Deaf people can learn FSL more easily when presented with a different method from what they currently have. Therefore, it seeks to build and develop an E-learning environment with online materials designs as a learning experience to examine its effectiveness.

This descriptive study aims to describe the basic features of the data, which was collected directly from the participants. In order to analyze this data, the descriptive statistical analysis was used since it suits this study. First, the present work gives a theoretical backdrop to the adopted research methodology. It also provides in-depth detailed information on population and sample, instrument, data collection method and data analysis. Next, the procedure and results of this study were clearly presented in the following paragraphs, in addition to the final interpretation of the findings.

3.1 Research Methodology

Research is not just a process of gathering information, as is sometimes suggested; rather it is about answering unanswered questions, in this sense, Dornyei (2007) states that research means trying to find answers to questions. However Kothari (1980) lays down the meaning of research, as “the search for knowledge through objective and systematic method of finding solution to a problem is research.”(p. 1)

Types of research are classified according to the nature of study, Descriptive study has been very common in conducting research in many disciplines, including education, psychology and social sciences. Kumar (2011) claimed that “a research study classified as a descriptive study attempts to describe systematically a situation, problem, phenomenon, service or program, or provides information, or describes attitudes towards an issue. (p. 30)

These forms of work have also begun to be widely used in the teaching and learning of second languages. Thus, they describe the characteristics of the data that is being studied. However, numeric data collected in a research project can be analyzed quantitatively with statistical tools using descriptive statistics. According to Allen (2017) “Descriptive statistics allow a researcher to quantify and describe the basic characteristics of a data set. As such, descriptive statistics serve as a starting point for data analysis, allowing researchers to organize, simplify, and summarize data.”(p. 1)

3.1.1 Research Approach

The research approach is a plan and procedure that consists of the steps of broad assumptions to detailed methods of data collection, analysis, and interpretation. It is therefore, based on the nature of the research problem being addressed, research approach serves as a theoretical background undertaken within a particular study (Dornyei, 2007). The used approach in this work is the quantitative approach because the field of work involves collecting quantitative data using tests and the questionnaire. Quantitative research approach often translates into the use of statistical analysis to make the connection between what is known and what can be learned by research. Finally, this approach provides a more complete understanding of the research problem.

3.1.2 Research Design

In this section, the researcher provides a justification for adopting the methodology research design of the study. Kumar stated that a research design is a formal strategy implemented by the researcher to address questions validly, scientifically, correctly and economically (2011). The overall design of the current study used a quantitative design for the questionnaire. Creswell, Clark, Gutmann, and Hanson (2003) argued that the use of quantitative designs surveys to generalize from a sample to a larger population. Typically speaking, the quantitative design analysis is primarily analytical and deductive.

One of the commonly used designs in quantitative studies can be classified as the before-and-after design (also known as the pre-test/post-test design). This may quantify improvement in a situation, phenomenon, issue or attitude. This is the most suitable method for calculating the effects or efficacy of a system (Kumar, 2011). It is one of the most commonly used designs in evaluation studies. The disparity between the two data collection point's sets in relation to the dependent variable is the program's effect. In general, adopting such design for this study would strengthen the quality of the study's findings. This will also make a significant contribution in understanding English language problems for the D/HoH students.

3.2 Population and Sampling

To accomplish our research, we recruited sixteen students from the CYDL at Biskra (École des jeunes sourds EJS), They were selected through purposive sampling technique we followed the research procedure by asking permission from Directorate of Social Solidarity and Women's Issues as well as the Department Administration to conduct this study (See appendix 1 and 2). We have selected students of the fourth year middle school level, aged 15 and up who were D/HoH and use the SL as their primary language (the language they use

most). The participants were divided into two groups of the same level, yet the whole population has volunteered ($n=N$). First, students of fourth year have the required level in English language. They are beginners in using the language but they do have enough training in general. In addition, the curriculum of fourth year middle school includes varied activities and lessons on vocabulary, grammar, syntax, lexis and pronunciation, so it was practical to work with this level.

3.3 Instruments

The instruments used in this study were an achievement test, treatment, and a vocabulary test. The achievement test was administered to learners at the beginning of the course, which was used as a pre-test, and a vocabulary test, the test was used as a post-test at the end of the study, which was administrated to the students after the treatment, as well as the questionnaire.

3.4 Data Collection Methods

Data collection methods are essentially the process of utilizing instruments to gather the details required for the analysis of the study. The choice of methods for collecting data depends on the form of study design, as well as the research approach, via these data collection methods the researcher will check and test hypothesis using different techniques. As we mentioned above the quantitative study design determines the usage of the implemented methods of data collection in a given study, we opt from both a pre-test and post-test as a before and after assessment to measure whether the expected changes took place in the participants in a program as well as a questionnaire to answer the research questions.

3.4.1 Tests

The test is considered as a tool of the researcher gathering and evaluating the quantitative data. Brown (2001) claimed that “Tests may also prove useful in gathering information in a language teaching setting.” (p. 4), it is used to show whether the independent variable triggers some predictable variability or not in the dependent variable.

3.4.1.1 Structure and Aims

The pre-test in the study, includes three activities grammar task (word type), tenses (simple present) and vocabulary task (matching the picture with the equivalent word task this kind of tasks may suit D/HoH students who are vision-oriented learners). The aim of the test is to have an idea of their level and to test their achievement in English language (see appendix 3).

The post-test, included word list, the words were selected from the English Book that is taught in grade four middle schools in addition to a number of simple phrases. Student were asked to give the correct sign of each, and apply what they learn from the sessions of learning vocabulary through an online dictionary (the SLA Pro online sign instruction). The aim is to test how many vocabulary items participants could correctly identify, immediately after learning in two weeks later. The evaluation had a paper answer sheet for participants to mark their answers. The test was given to the learners at the end of the course to determine their improvement after the intervention (see appendix 4).

Vocabulary was chosen from different semantic categories. We chose these categories because the vocabulary items within each can generally be represented clearly by an image, even without a label. For our experiment the ASL Pro dictionary makes use of several

different people to model the signs. Finally, the trials occurred in the school's automated media hall.

3.4.2 Questionnaire

The questionnaire is a research instrument consisting of a series of questions developed for the purpose of gathering information from respondents. According to Brown (2001), "Questionnaires are any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers"(p. 6). Questionnaires are divided into three types: quantitative, qualitative and semi-structured questionnaires (Dorney, 2007) each type is conducted under various research approaches and designs, and patterned by various formats and questions.

A persuasive and qualified questionnaire is a well-designed and ordered interface, which uses various styles and options. In addition, the suitable density in which the survey questions are classified in full correct way inside the pages, margins, sufficient use of font and width and correct use of tables and identification of questions types.

3.4.2.1 Aim

The aim of the student's questionnaire in this study is to demonstrate the degree of respondents to develop language awareness. The core purpose of focusing on this data collection method is to acquire a large amount of data over a significant period and to describe the features of the research sample included in the presented work. Precisely in providing the views, perceptions, opinions and attitudes of the participant on the usage of E-learning project to improve their language learning.

3.4.2.2 Structure and Content

The present questionnaire consisted of a brief introduction provided the purpose of the study, in addition to two sections each section was designed to collect data about one aspect of the study. It is also composed of open-ended questions that enable the respondents to be free and answer in their own way, and close-ended questions of several types involving: multiple choices questions that enable respondents to choose from a list.

First section composed of six direct questions aims to identify the participant's Age (question 1), Gender (question 2), Degree of hearing loss(question 3), (question 4) was about the possibility of using hearing aids, (question 5) if they have D/HoH relatives and (question 6) was about their motivation toward English language. Overall, this section is devoted to obtain personal information about the respondents (see appendix 5).

The second section composed of ten varied questions sought to investigate the students' perceptions about acquiring the language. In addition, it is devoted to identify the method that they mostly use while communicating with people. Moreover, it attempted to find out the main difficulties and challenges that the students encounter in studying English. From the other side, it is targeted to identify the main strategies and techniques that students use in learning. Further, it attempted to explore the students' opinions, and attitudes concerning their participation and engagement in an E-learning setting. On the whole, the present section was about the general perceptions of the respondents about the effectiveness of ASL Pro in learning foreign language for D/HoH signers.

The researcher believed that a long questionnaire would be difficult to be filled in because of tight school schedules and the time spent for explanation that is why we tried to shorten the questionnaire size (see appendix 6).

3.4.2.3 Piloting and Validation

Piloting the questionnaire is a very essential step because of its predictive validity in adapting enough items to cover all aspects of a variable. Henceforth, a researcher can escape a great deal of dissatisfaction by performing a pilot level. It may also evaluate the appropriateness of the issues, the actual wording of items, the accuracy of the redundancy and confusion and the main functions of the questionnaire.

In the initial piloting phase, which took place on Sunday 23 February 2020, a pilot questionnaire was conducted since the researcher wished to be sure of the respondents' interpretations of the questions. The participants of the piloting were the teacher of English and a Deaf student. As the final piloting phase took place, further important consideration regarding the final development of the questionnaire was taken into account. The participants of the piloting noticed some difficulties in understanding some of the questions' objective. However, some of them noticed that the choices mentioned had restricted their responses, so we proposed leaving room for open-ended questions (see appendix 6).

The Arabic version was added to the questionnaire then delivered to my supervisor to check the overall appearance of the questionnaire, the clarity of the instructions, the terminology of the items, and whether there are any confusion or difficulty that the participants may experience were he has made some considerable remarks (see appendix 6).

3.4.2.4 Administration

After completing the questionnaire (see Appendix 6) it is worth noting that, it was conducted through paper-based survey distributed to the whole participants (sixteen D/HoH student who have joined and learned from the ASL Pro) on 27th February 2020. They handed back the questionnaire right after the completion, which took forty minutes (40min) of

answering since they needed help in the comprehension of items they behaved were ambiguities or when they face difficulties while answering.

3.5 The Treatment Implementation

At the beginning of the school year, as the English classes started, the researcher attended three sessions as an observer of the two groups, the researcher needed to become associated with the context and participants of this study. Such observations also allowed the researchers to communicate easily with signs and further collect the data. The treatment had taken place at the CYDL in the school's automated media hall. This study was realized in seven sessions, two sessions for the tests, four for the treatment and one for the questionnaire.

Before starting the instruction, we administered the vocabulary test, the participants responded to the pre-test in a one-hour session on 5th February 2020 at 13:00a.m, without the aid of the instructor except in clarifying the directions for each test task. The test was designed to match the standard of the students. We planned to start the treatment on the 09th February, because the catch up exams were programmed on next month so we were obliged to start the experiment directly. The participants were randomly divided into two groups, both groups were taught by the researcher. All participants received the treatment (ASL Pro courses) in four sessions, two sessions a week, each session in one hour and both groups were held in different days of a week as shown in the timeline table.

Group number	Day	Time
A	Sunday 09 th February2020	15:05-16:00a.m
	Tuesday 11 th February2020	11:00-12:00a.m
B	Monday 10 th February2020	13:00-14:00a.m
	Thursday 13 th February2020	09:00-10:00a.m

Table3. 1: Timeline Table of Treatment Sessions

Participants engaged in an E-learning environment based on the “ASL Pro” technique using the projector so that all students received the same instructions, we first started by instructing the learners on how to use the program and providing illustrated examples. At the beginning, participants were shown a list of items chosen from different categories, the words were displayed with the overhead projector then represented in a video of an ASL sign that reported the sign’s meaning. Participants were instructed to read the English word and follow the corresponding video to view the sign many times. Then they would have quizzes, one of the sign videos would play and loop while participants chose the corresponding item from a selection of the word list as shown below:



Nouns	Verbs	Adjectives
Jacket	Wear	Cold
Jungle	Communicate	Long
Food	Eat	Hungry
Pizza	Travel	Delicious
Home	Understand	Narrow
School	Study	Funny
Pilot	Wash	Angry
Health	Read	Fast
Desire	Drink	Calm
Father	Close	Heavy
Night	Search	Happy
Sea	Have	Sad
Family	Include	Gentle

Figure3. 1: Learning Vocabulary Using ASL Pro from the Chosen Word List

Participants learned three and were quizzed on them, then learned three more and were quizzed on six, for every three new signs that they learned, a set of three older signs dropped out of the quiz. After participants cycled through all vocabulary items, we moved to sign with simple phrases with the same method they learned one and then quizzed on it, then learned one more until the last phrase as shown below:

➤ **Read the phrases bellow and foloow|the signs of each one**

- Close your book.
- I studied all night.
- We have a test tomorrow.
- My care is bright red.
- I 'am a teacher.
- What kind of work do you do?
- I have a cold.
- I feel fine.
- Are you hungry?
- Excuse me.
- The food is delicious.



Figure3. 2: Learning Simple Conversational Phrases Using ASL Pro from the Chosen List

No new signs were taught, but they continued to quiz on all the learned signs in random ordering until the sessions had elapsed. Participants were repeated on each sign a minimum of four times, but some participants answered quickly enough that they memorize better before the time ran out.

Upon completion of the procedure, the post-test was distributed for group “B” on Monday 17th February at 13:00a.m and for group “A” on Tuesday 18th February at 09:00a.m.

3.6Data Analysis

Considering the research questions, the researcher tried to measure the effectiveness of the treatment on the participants with respect to data collected between the two tests and questionnaires. The data collected have been coded and analyzed using SPSS version 20 and

Excel 2007. We relied on frequencies, percentages and descriptive statistics to interpret our data, the results obtained will be explained and delineated in the following two sections.

3.6.1 Section One: Pre-test and Post-test Scores Analysis

In this section, all the data collected through the pre-test and post-test are analyzed and interpreted in details and presented in tables and frequencies in addition to graphs and descriptive statistics that aim at comparing the tests scores. After examining the participants' answers to the two tests, a total score was given to each subject. A paired sample *t*-test was conducted to compare the mean scores of pre-test and post-test.

First descriptive statistics was run in order to obtain sample statistics concerning the results of the two tests. The descriptive statistics of the pre-test and post-test results will be shown in tables below of scores frequency of occurrence. The maximum score for each test was decided to 20. As can be observed in the table 3.2 below the pre-test scores are not that much good. None of the learners fell into the 'excellent' or the 'good' levels. However, the majority of participants (n=16) performed poorly in the tasks (less than 10.5 points out of 20) only two students got the average 10.

The results of post-test, which appear in the table3.3, represent scores frequencies; participants performed better and their performance moved up from the range of fair to excellent levels after the treatment. While the majority were at a poor level on the pre-test, most of them reached the good level on the post-test.

	Frequency	Percent	Valid Percent	Cumulative Percent
2,00	1	6,3	6,3	6,3
3,00	2	12,5	12,5	18,8
4,00	1	6,3	6,3	25,0
4,50	1	6,3	6,3	31,3
5,00	1	6,3	6,3	37,5
5,50	1	6,3	6,3	43,8
6,00	1	6,3	6,3	50,0
Valid 7,00	1	6,3	6,3	56,3
8,00	2	12,5	12,5	68,8
9,00	1	6,3	6,3	75,0
9,50	1	6,3	6,3	81,3
10,00	2	12,5	12,5	93,8
10,50	1	6,3	6,3	100
Total	16	100%	100%	

Table3. 2: Students' Scores before Using ASL Pro

	Frequency	Percent	Valid Percent	Cumulative Percent
7,00	1	6,3	6,3	6,3
8,00	1	6,3	6,3	12,5
11,00	1	6,3	6,3	18,8
11,50	1	6,3	6,3	25,0
12,00	3	18,8	18,8	43,8
Valid 12,50	2	12,5	12,5	56,3
13,00	2	12,5	12,5	68,8
13,50	2	12,5	12,5	81,3
14,50	1	6,3	6,3	87,5
15,50	1	6,3	6,3	93,8
16,00	1	6,3	6,3	100
Total	16	100%	100%	

Table3. 3: Students' Scores after Using ASL Pro

Further, descriptive statistics and paired sample *t*-test were run in order to determine whether the difference in the mean scores is statistically significant before and after the treatment. Table 3.4 and 3.5 presents the results:

	N	Minimum	Maximum	Mean	Std. Deviation
Students scores before using ASL Pro	16	2,00	10,50	6,5625	2,81588
Students scores after using ASL Pro	16	7,00	16,00	12,3438	2,33608
Valid N (listwise)	16				

Table3. 4 : Descriptive Statistics of Students Scores before and after Using ASL Pro

	Paired Differences				t	df	Sig. (2tailed)
	Mean	Std. Deviation	95% Confidence Interval of the Difference				
			Lower	Upper			
Pre-test and Post-test	-5,78125	2,16001	-6,93224	-4,63026	-10,706	15	,000

Table3. 5: Paired Sample *t*-Test, Pre-test and Post-test

According to the tables presented above, as shown in this table 3.4, the mean of the pre-test is $M = 6.56$ / $SD=2.81$, and for the post-test is $M =12.34$ / $SD= 2,33$ it is clear that the mean of the post-test was higher than the mean of the pretest ($12.34 \geq 6.56$). Subsequently, As Table 3.5 shows, there was a statistically significant difference between the pretest and posttest $t(15) = -10.706$, $p=.000$ (Sig. 2 tailed $< .05$), 95% Confidence Interval of the Difference CI $[-6.93, -4.63]$.

Figure 3.3 displays the comparison of differences of each student's pre-test and post-test scores. It indicates that the students' post-test rates increased. Nine students in particular (1, 8, 9, 10, 11, 13, 14, 15 and 16) were able to boost their rates.

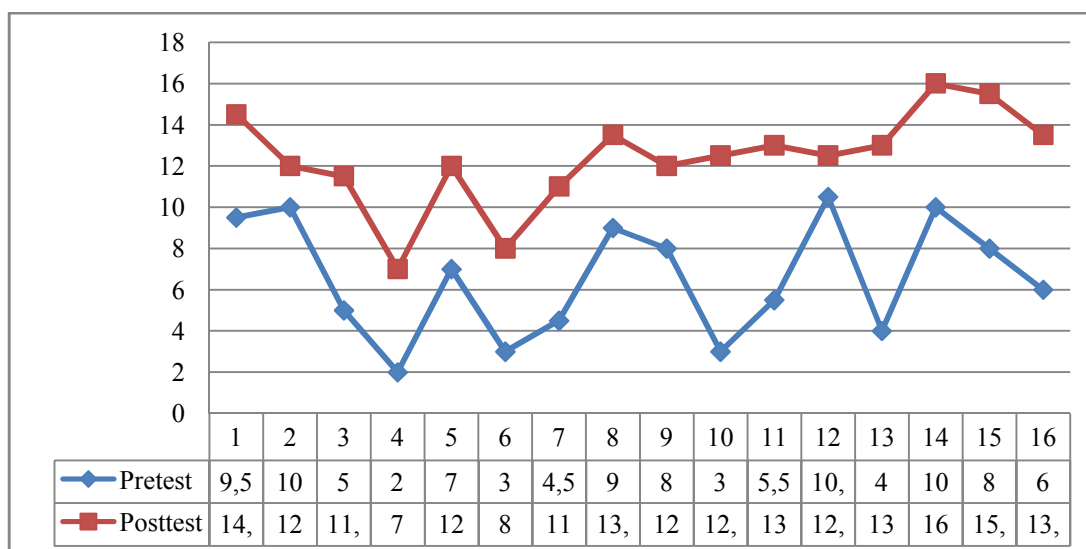


Figure3. 3: Score Comparison between Pre-test and Post-test Scores

It is obvious that the participants showed better performances after the treatment. Additionally, these results confirm that using E-learning materials is more effective than using traditional SL instructions in teaching English as a foreign language to D/HoHlearners.

3.6.2 Section Two: Analysis and Interpretation of the Participants' Responses

The participants were asked to respond to a questionnaire to investigate their opinions, attitudes and expectations on the implementation of "ASL Pro" and its interrelationship in improving their language learning. The participants were sixteen (16) students whom have subscribed and joined within the application of ASL Pro courses. Hence, the researcher analyzed 16 received questionnaires from the participants.

However, the subsequent portion also offers detailed review and description of the elements and conclusions of the questionnaire. As already stated, the questionnaire consists of two sections that deal with various data angles. The analysis of these responses will therefore consider each item in a corresponding way.

▪ Section One: Student Profile

This section prompts to collect the general background information about the participants' age, gender, degree of hearing loss and whether they have D/HoH relatives, in addition to their motivation toward the English language.

Item 01: Participants' age

This question reveals the students' age

Ages	Frequency	Percent	Valid Percent
15	1	6,3%	6,3%
16	2	12,5%	12,5%
17	3	18,8%	18,8%
18	8	50%	50%
19	1	6,3%	6,3%
20	1	6,3%	6,3%
Total	16	100%	100%

Table3. 6: Age Distribution

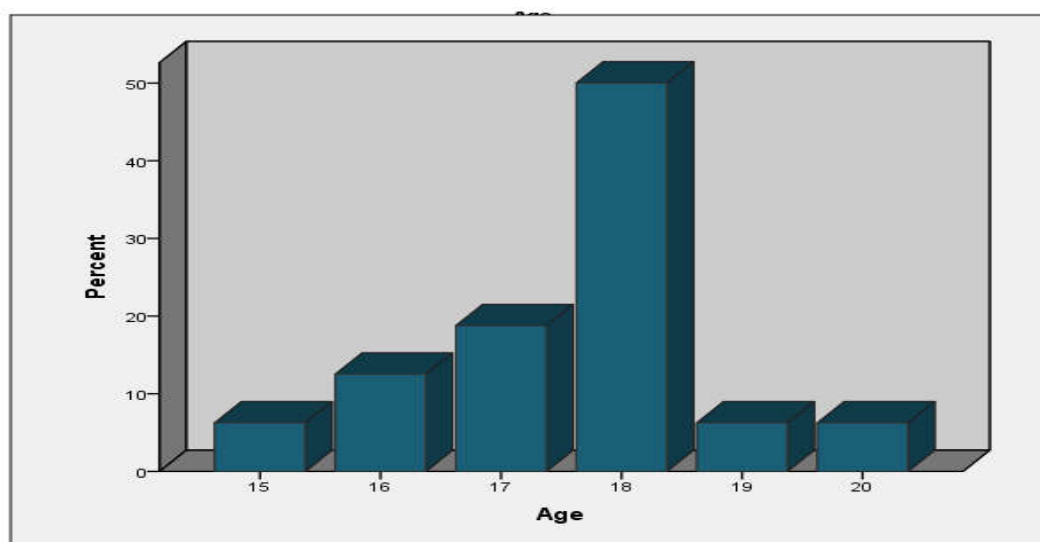


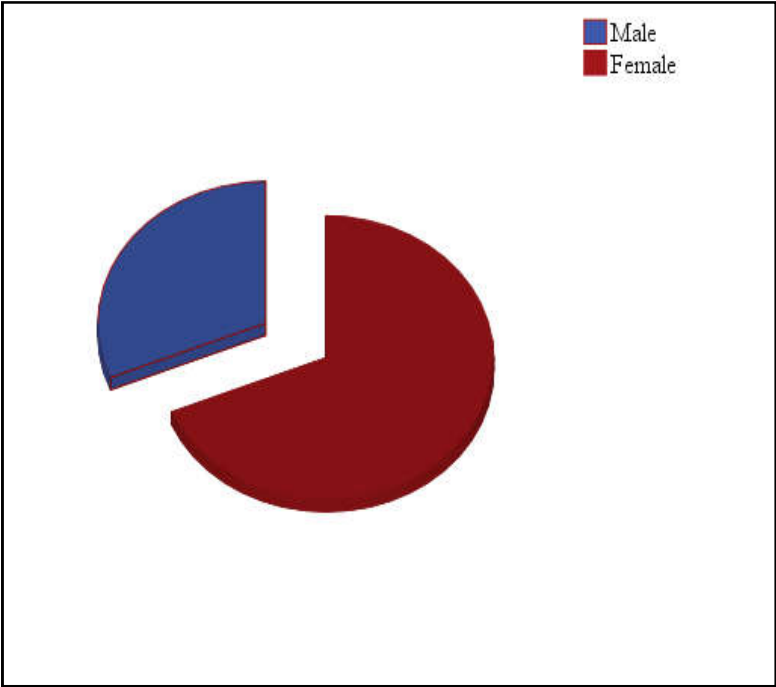
Figure3. 4: Age Distribution

The present item is about the age of participants. As can be seen in Table 3.6, of all 16 participants, ages were between 15 and 20, 50% of participant aged 18 years and 18.8% 17 years and 12.5% aged 16 the rest minorities aged 15, 19 and 20. Similarly, as the figure 3.4 shows, that the percentage of age 18 was greater than the rest, this explains that nearly

most of the students have not succeeded in their academic career. Therefore, the sample is suitable to our research since students are mature enough to understand the questions displayed in the questionnaire

Item 02: Participants' gender

The present question aims to identify the participants' gender.



	Frequency	Percent
Male	5	31,3%
Female	11	68,8%
Total	16	100%

Table3. 7: Gender Distribution

Figure3. 5: Gender Distribution

As the figure 3.5 depicts, the dominant gender among the participants was of Female, likewise, as the Table 3.7 shows, all 16 participants, 5 are males, and 11 are females and that the percentage of female was higher than males. That is to record, 68.8% of females and 31,3% of males from the total number of respondents and whom they have joined the ASL Pro courses.

Item 03: Participant's degree of hearing loss

- Mild
- Moderate
- Moderately severe

- Severe
- Profound

The present question aims to identify the participant's degree of hearing loss.

	Frequency	Percent
Mild	1	6,3%
Moderate	4	25%
Moderately severe	3	18,8%
Severe	2	12,5%
Profound	6	37,5%
Total	16	100%

Table3. 8: Participant's Degree of Hearing Loss

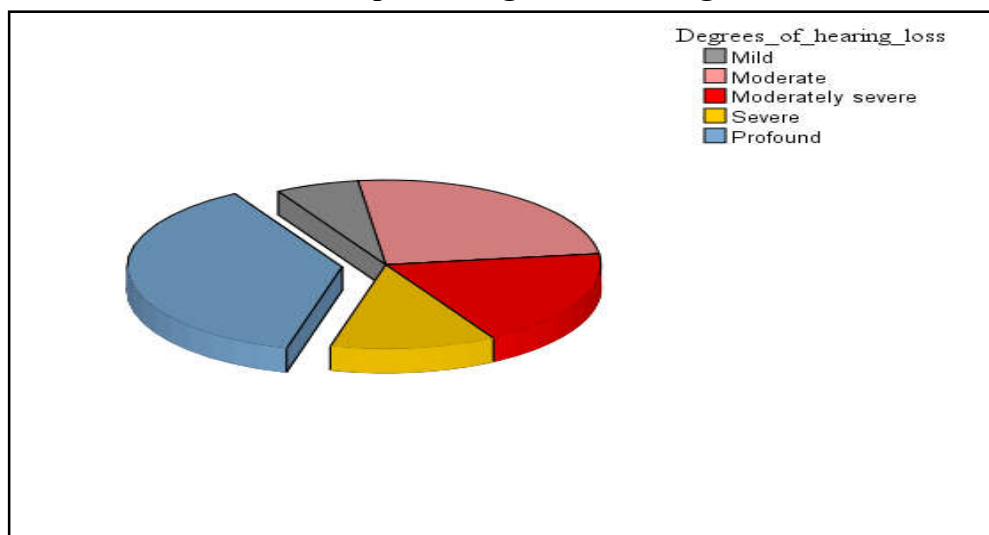


Figure3. 6: Participants' Degree of Hearing Loss

As the figure 3.6 and the table 3.8 illustrates, the percentage of the participant's degree of hearing loss, most of the responses rest on the degree of "Profound" (37.5%) of six participants than "Moderate" (25%) of four participants. While three (18.8%) of them considered themselves as "Moderately severe" and (12.5%) of two participants were "severe" whilst only one participant label himself as "Mild" (6.3%).

However, the participants' variety of hearing losses degrees creates a sense of plausibility within the intended E-learning experience in which not only those with profound hearing loss were involved but also mild, moderate, moderately severe and severe.

Item04: The use of hearing aids

- Yes
- No

This item attempts to figure out if the participants were make use of hearing aids or not.

	Frequency	Percent
Yes	12	75%
No	4	25%
Total	16	100%

Table3. 9: Participants' Use of Hearing Aids

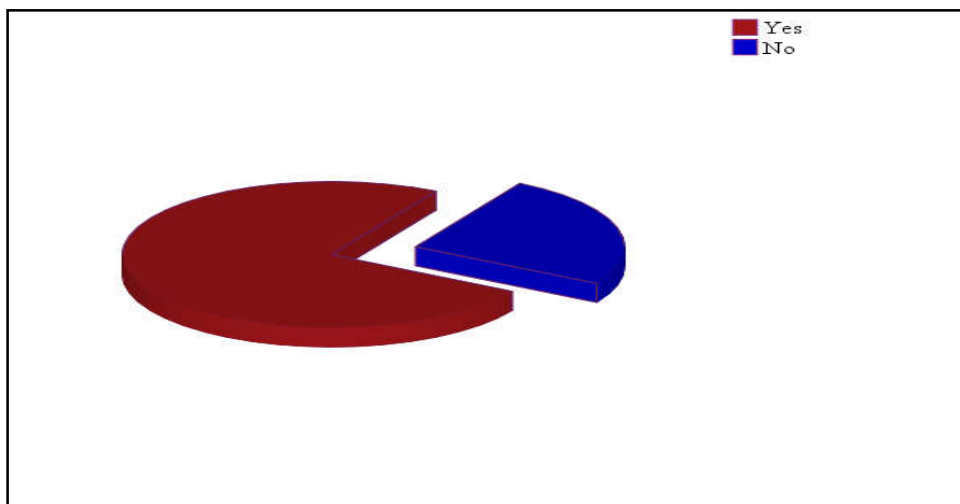


Figure3. 7: Participants' Use of Hearing Aids

This item is simply yes or no question. According to the table 3.9 and the figure 3.7, 12 of participants confirmed that they use hearing aids, and only four of them disapproved that they rely on them. That is to confirm, that the high percentage of the confirmation

reached (75%), while the disapproval recorded (25%). Which in turn depict that the overall number of participants were able to make use of hearing aids, which helps mainly in learning.

Item 05: If they have D/HoH relatives

- Yes
- No

	Frequency	Percent
Yes	9	56,3%
No	7	43,8%
Total	16	100%

Table3. 10: Participants' D/HoH Relatives

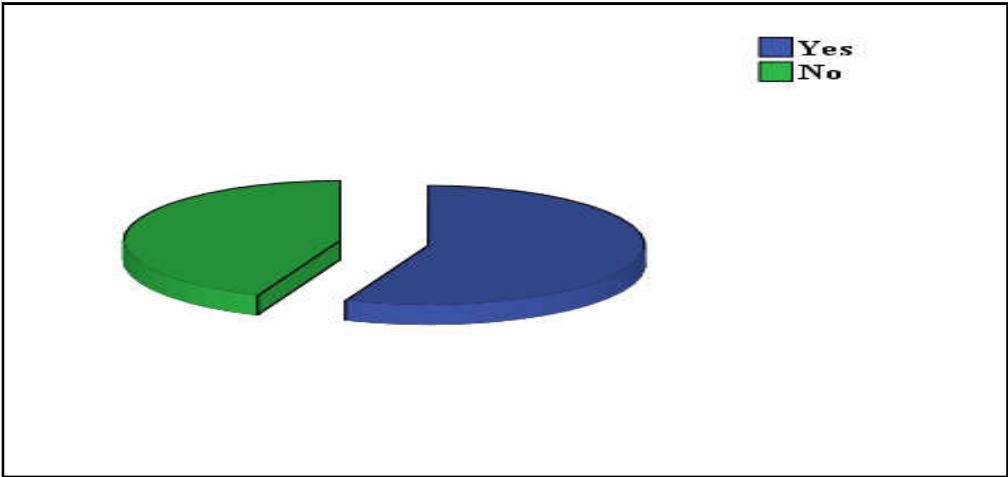


Figure3. 8: Participants' D/HoH Relatives

In response to the fifth question, table 3.10 and figure 3.7 shows that the majority of the respondents (09participants) have D/HoH relatives within their families, the rest of them (07participants) claimed that they do not have D/HoH relatives at all. The results confirm that the majority of the students have Hereditary hearing loss (56,3%) and the rest of them may suffered postpartum hearing loss (43,8%)

Item 06: Participants' motivation toward the English language

- Greatly
- Rather yes
- I do not mind
- Rather not
- Hate it

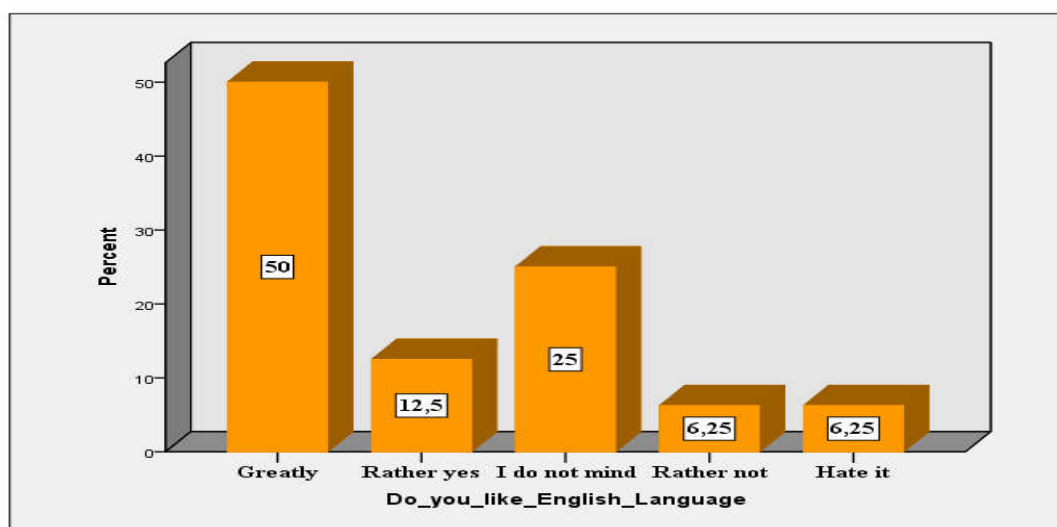


Figure3. 9: Participants' Motivation toward the English Language

The present item aims to discover the students' motivation toward the English language in a form of multiple choices. As the figure 3.9 represents, each column indicates a choice, at the top of the choices half of the sample (50%) claimed that they like English language "Greatly" following, (25%) of them indicate that they "do not mind", (12.5%) respond by "Rather yes" the rest two choices with same percent (6.25%) "Rather" no and "Hate it". Therefore, the outstanding results set that half of the participants show a great interest concerning the English language and just few of them do not have any interest in the language.

- **Section two: E-learning Environment, Use of "ASL pro Sign Language Tutorial**

The aforementioned section is designed to investigate the D/HoH participant's general practices in communication, learning and attitudes using the Computer Internet and in a more precise way toward the ASL Pro instructional SL application of learning the exact signs. It comprised ten (10) open-ended and close-ended questions. Therefore, each question was designed to explore different aspect about the researched study. Accordingly, it was constructed to examine the participants' attitudes and perceptions about E-learning and the designed lessons experienced with the ASL Pro and its usefulness in enhancing their FSL abilities.

Item 01: D/HoH communication options

- Spoken language
- Written language
- Sign language
- A combination of all above

This item attempts to determine the participant's communication options.

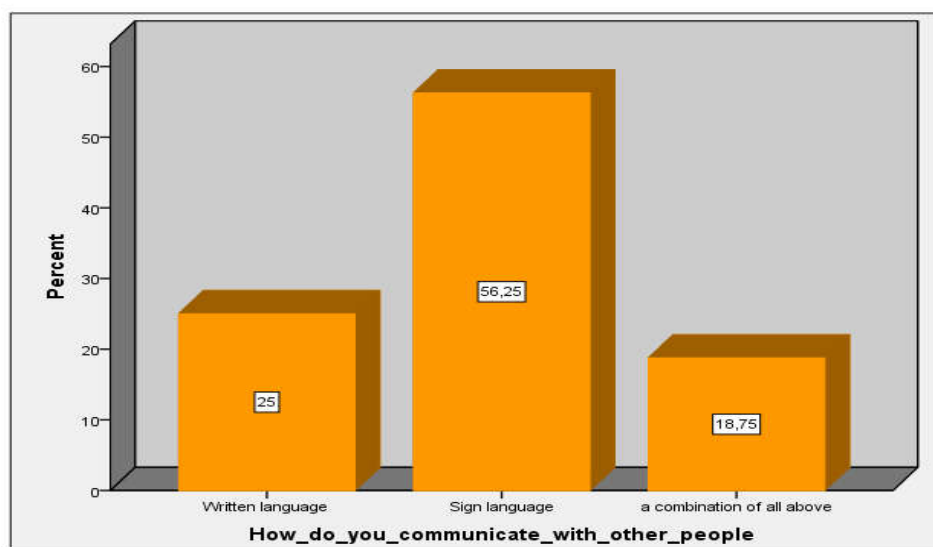


Figure3. 10: Participants' Communication Options

As the figure3.10 distributes the percentage of the participants' communication options, most of the responses rest on choosing "Sign language" (56.25%) and "Written language" (25%). Wherein, the least responses fell on the last choice "Combination of all above" (18.75%). Henceforth, based on the percentages students are in need to learn the exact signs for they based on SL in communication and they will benefit from mastering the SL since they consider it as their first language.

Item 02: Participant's degree of understanding the teacher

- Very good
- Good
- Medium
- Don't understand

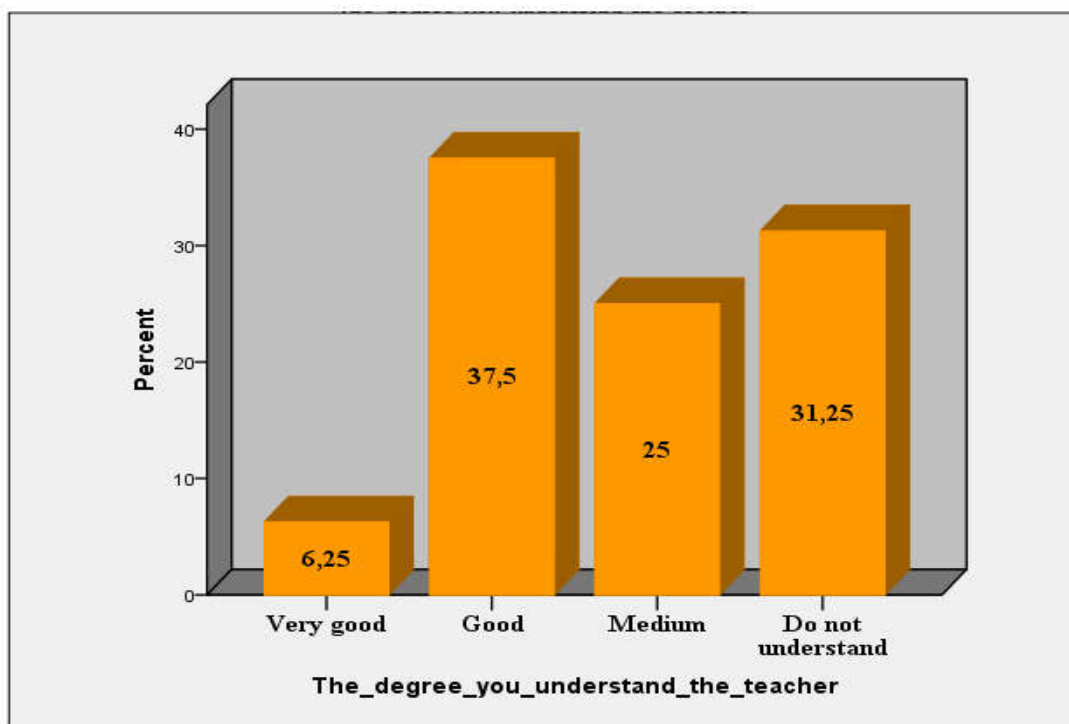


Figure3. 11: Participants' Degree of Understanding the Teacher

The present item aims to discover the participants' degree of understanding the teacher while explaining the lesson, in a form of multiple choice, four choices were assigned in which

the respondents were asked to choose only one choice. As the figure3.11 illustrates, each bar represents a degree, most of participants, precisely, (37.5%) of them stated that their degree of understanding the teacher is good, while (31.25%) of them stated that most of the time they do not understand the teacher. Similarly, (25%) of them choose the medium level of understanding whereby, (6.25%) participants appointed a very good understanding of the teacher and lesson content.

Item 03: While studying a topic participants depend on

- Revise from the text book
- Depend only on the teacher
- Use the computer internet

	Frequency	Percent
Revise from the text book	1	6,3%
Depend only on the teacher	8	50%
Use the computer internet	7	43,8%
Total	16	100%

Table3. 11: What Tools Participants Rely on in their Studies

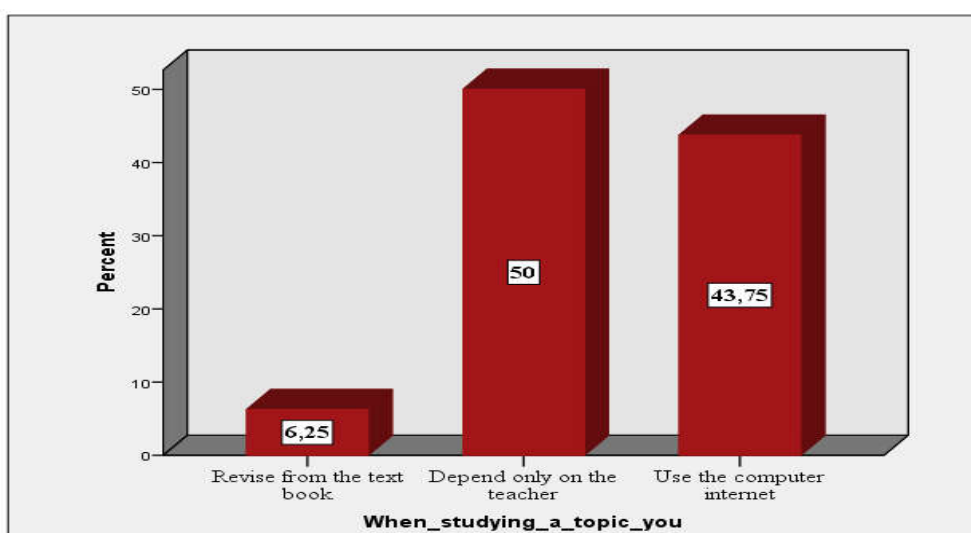


Figure3. 12: What Tools Participants Rely on in their Studies

The present item is indicated in order to explore the tools that participants rely on during their study activities. A multiple choice of three choices were indicated. Therefore, as the table 3.11 and the figure3.12 reports, the majority of participants, more precisely 08 participants (50%) of them depend only on teacher's explanation. Whereby, (43.75%) rely on computer internet and only (6.25%) revise from the textbook.

That is to confirm the use of technology with the guidance of teacher's instructions is what the learners need. The results are of great significance to the present study in connection with the implementation of the ASL Pro sign instruction; it confirms the fact that the most of the participants had an access to computer internet.

Item 04: The challenges students face during English sessions

- Understand the matter being studied
- Communicating with the teacher
- Being misunderstood
- Other

	Frequency	Percent
Understand the matter being studied	8	50%
Communication with the teacher	4	25%
Being misunderstood	4	25%
Total	16	100%

Table3.12: Students' Challenges during English Sessions

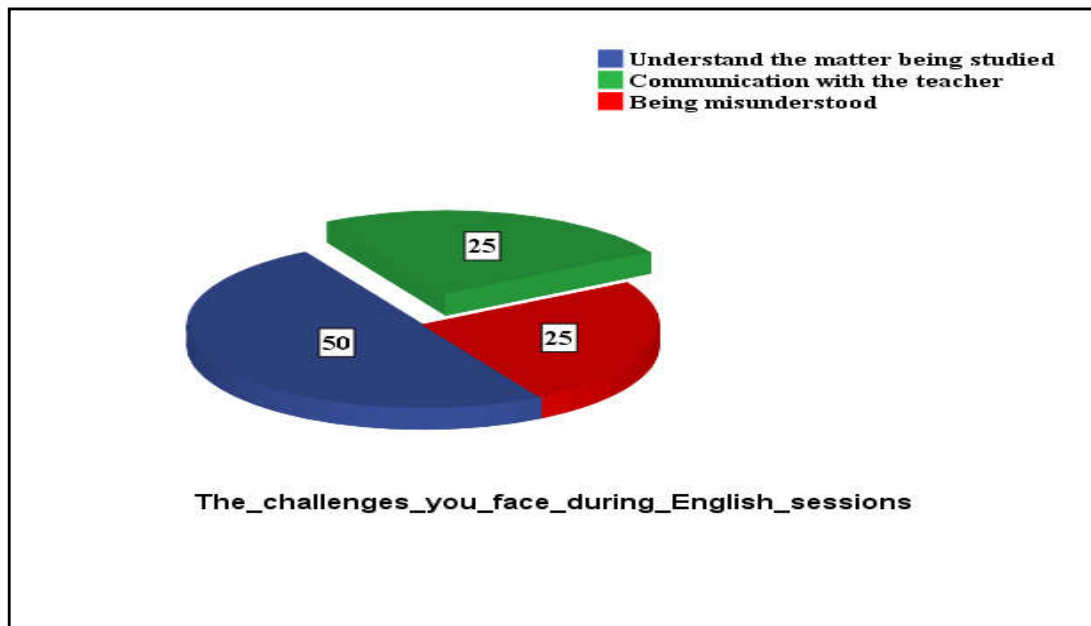


Figure3. 13: Students' Challenges during English Sessions

The aforementioned question intends to find out participant's challenges that they faced during English sessions. In a form of multiple choice, four choices were assigned in which the respondents were asked to choose, as the table 3.12 indicates most of participants, precisely (50%) 8 of them stated that they face difficulty in understanding the matter being studied. Whereby, as the figure3.13 illustrates the rest of them were equally subdivided to either communicating with the teacher (25%) or being misunderstood (25%).

Thereby, the salient purpose for this question is to indicate precisely the difficulties since their challenges in the classroom are all too often over-looked. The only way D/HoH learners can gather information is visually, and they will be tested on what they have learned or were supposed to have learned. Teachers often hypothesize that their D/HoH students are capable of lip-reading, which can be true, but it is essential to keep in mind that not all of spoken English is distinguishable on the lips. When lecturing students, teachers should consistently face their Deaf students to attract them, and give them applicable time to process the preceding subject's information.

Item 05: Have you ever tried to overcome those difficulties?

- Yes
- No

This question aims to elicit participant's attempts to overcome their challenges faced in studying English language.

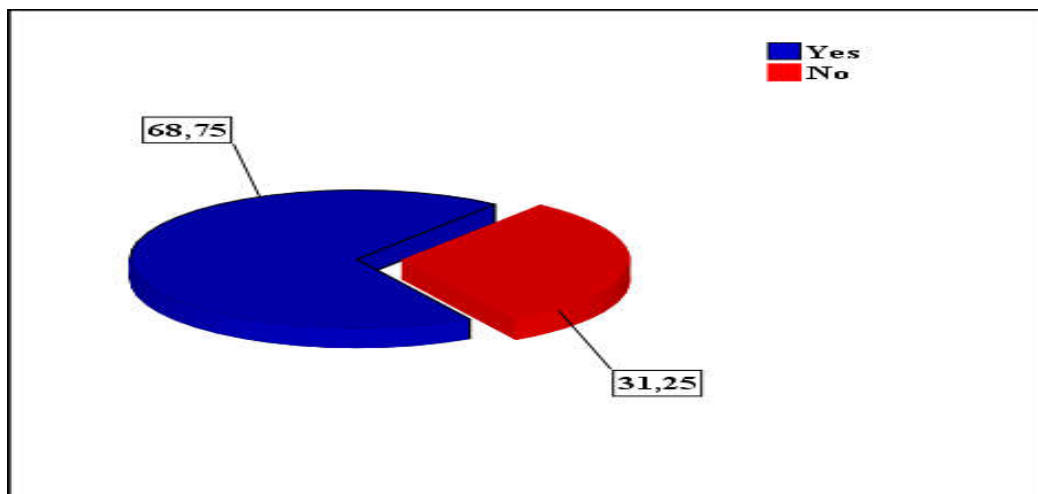


Figure3. 14: Participants' Attempts to Overcome their Challenges

This question is related to with the previous one; it is simply a yes or no question. According to the figure 3.14, (68.75%) of the participants confirmed that they try to tackle the obstacles they face in learning English while only (31.25%) opt for no. Altogether, the above-enumerated results indicate that the vast majority of participants despite their disability have tried to overcome the challenges of learning English and they have great incentive to learn foreign languages.

Item 06: Participants' use of computer internet

- Yes at school
- Yes at home
- Yes elsewhere
- No

	Frequency	Percent
Yes at school	3	18,8%
Yes at home	10	62,5%
Yes elsewhere	2	12,5%
No	1	6,3%
Total	16	100%

Table3. 13: Participants' Use of Computer Internet

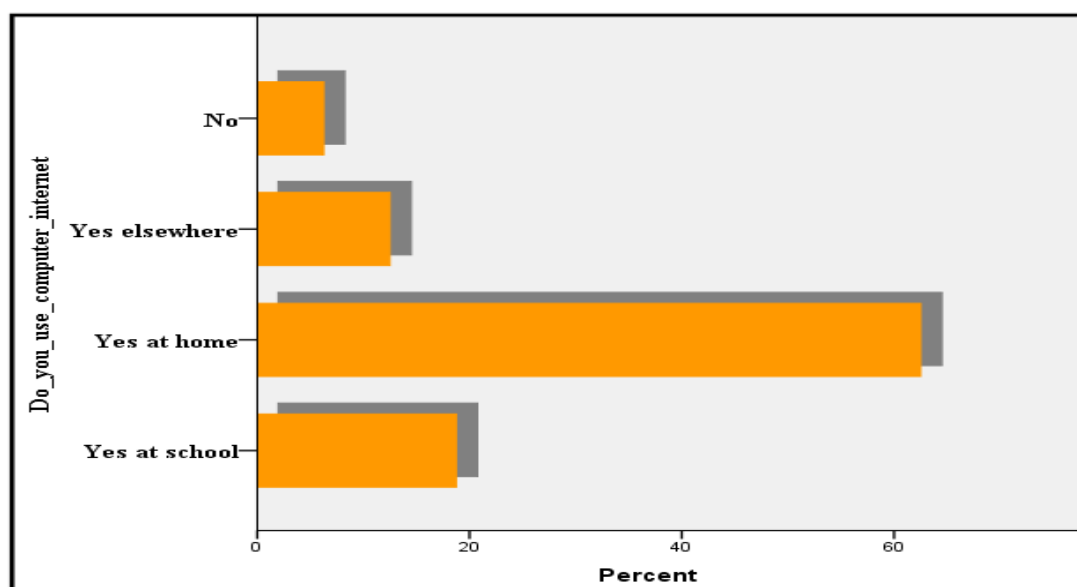


Figure3. 15: Participants' Use of Computer Internet

As the table 3.13 and the figure 3.15 illustrates, each column indicates a choice for the use on computer internet. The majority of students, precisely (62.5%) of them indicates that they use the computer internet at home and (18,8%) use it at school as long as they reside in, whereas (12,5%) use it elsewhere and only (6,3%) do not use the computer internet at all.

Thus, it can be concluded that the vast majority of the participants were capable to use the computer internet and they were motivated to take a forwarded online English courses by making use of the ASL Pro sing instruction.

Item 07: Participants' opinions on using technology /computer programs in FLL

Participants' opinions	Frequency	Percent
1. Absolutely helpful.	5	31,3%
2. I felt motivated.	1	6,3%
3. I had a positive experience in using technology for language learning.	1	6,3%
4. I regularly use the web to revise my lessons.	1	6,3%
5. It helps me to identify my learning weaknesses and strengths about Language.	1	6,3%
6. Yes.	3	18,8%
7. Yes it helps me to learn new signs	1	6,3%
8. Yes, it is helpful.	3	18,8%
Total	16	100%

Table3. 14: Participants' Opinions on Using Technology /Computer programs in FLL

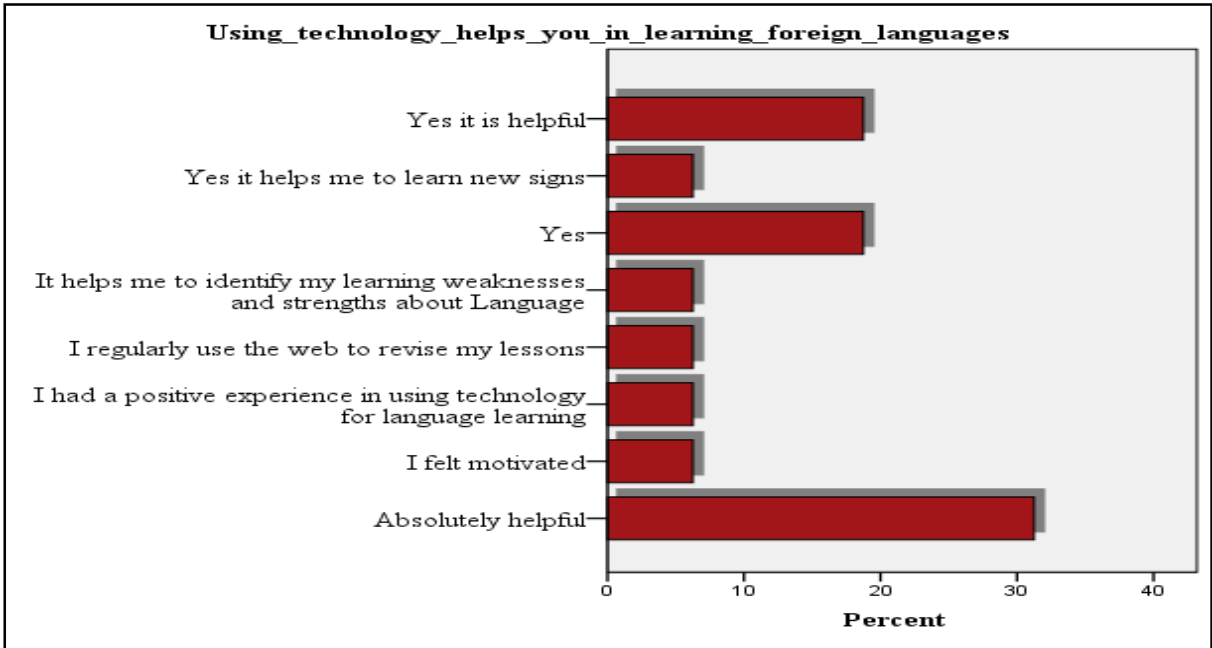


Figure3. 16: Participants' Opinions on Using Technology /Computer Programs in FLL

The present item targets to elicit the participants' opinions on using technology in learning foreign languages. To start with, the participants were asked to express their views in an open-ended question. From the stated in the table 3.14 and as illustrated in the figure 3.16, the majority of participants, precisely (31,3%) claims that the use of technology and computer programs is absolutely helpful in learning foreign languages, while (18,8%) were equally subdivided to either "Yes, it is helpful "or respond by "Yes". However, the rest (6,3%) were also divided evenly to different responses like "I felt motivated" or "I had a positive experience in using technology for language learning", " I regularly use the web to revise my lessons", "Yes it helps me to learn new signs" and "It helps me to identify my learning weaknesses and strengths about Language".

From the analysis of data, it can be concluded that the vast majority of the participants settle on having a positive experience with using technology in learning foreign languages.

Item 08: Participants' impression of attending a course with innovative methods, materials and activities that meet their needs

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The following item intends to recognize participants' perceptions on going on a course with new methods, materials and activities that suit their needs

	Frequency	Percent
Strongly agree	10	62,5%
Agree	4	25%
Neutral	2	12,5%
Total	16	100%

Table3. 15: Participants' Perception on Learning with New Methods and Materials

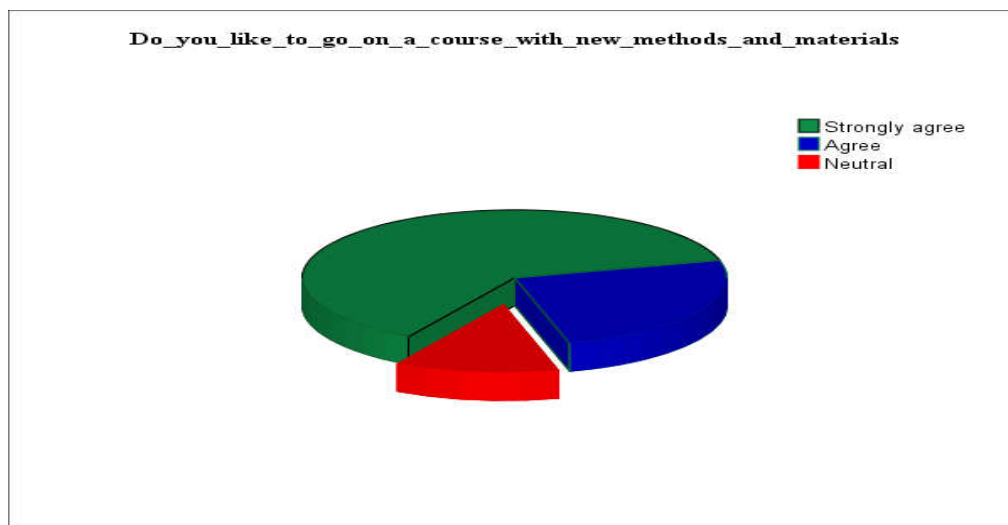


Figure3.17: Participants' Perception on Learning with New Methods and Materials

As the table3.15 and the figure 3.17 demonstrates, almost the majority of participants, accurately 11, (62,5%) of them indicate that they "strongly agree" with attending a course with new materials and methods while (25%) 4 participants of them choose "agree" and only 2, (12,5%) were neutral. It can be deduced that the majority of learners had the motive and curiosity to be engaged in an innovative course with different materials and new strategies to improve their levels in FSL.

Item 09: Participants' opinions and attitudes towards their engagement in ASL**Pro Courses**

- Absolutely helpful
- Somehow helpful
- Not helpful

The present item targets to elicit the participants' attitudes, perceptions and opinions toward their engagement in the learning process using ASL Pro sign instruction.

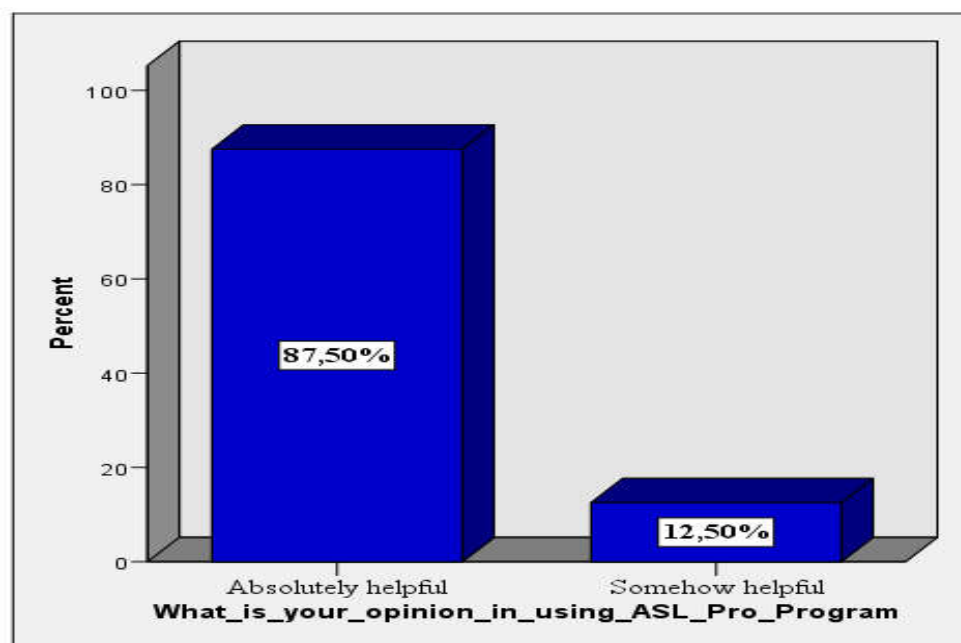


Figure3. 18: Participants' Views toward the Application of ASL Pro

The following item is designed to get a deeper understanding of the participants' attitudes, perceptions and study practices toward the ASL Pro instructional tools, more particularly, examining the participants' actual behavior toward conducting an E-learning environment. As the figure3.18 represents, clearly stated, the highest number rate on "Absolutely helpful" with (87.50%) that is to infer most of the participants enjoy and benefit from the program. Whereby, the rest of them precisely (12.50%) have indicated that it was

"Somehow helpful" this could be due to the learning troubles they face in absorbing or in adopting the new method.

As a result, the participants display great interest and attraction toward the ASL Pro program that was constructed to give the exact instructional sign model. Within this learning method, it is necessary to rely on the basics of learning so that the target population or the respondents may look for their respective fields of study and find their answers. Consequently, the implemented sign instructional application corresponds with the participants' priorities of studying in terms of developing learning content, and sharing applicable learning environment.

Item 10: Say whatever you wish being D/HoH student

This question aims to elucidate the participants' aims, suggestions and what they plan to achieve in the future.

1.	English is good
2.	English is good but I am Deaf.
3.	How is your voice?
4.	I cannot continue my study there is no special secondary schools for us.
5.	I have many ambitions.
6.	I like ASL Pro and studying in groups.
7.	I like English.
8.	I like English and I wish to learn the language better.
9.	I like the new method using the computer to know the exact sign.
10.	I want realize my dreams.
11.	I want to be accepted by others.
12.	I want to be understood.

13.	I want to become a teacher.
14.	I want to continue my study.
15.	Most of people cannot understand me.
16.	I like English.

Table3. 16 Participant's Perspectives, Aims and Wishes

The above table3.16 represents participant's aims and perspectives, as can be seen each student comment by what he/she wish and think about, all of them are trying to express themselves by signs since they could not convey their thoughts with words. This is an indication of their motivation, enthusiasm and love of learning and practice the language despite their disability. All of them are willing to be better and want to achieve a lot of things in the future but their actual state specifically the lack of capabilities may impede them to reach their goals. This question is intentionally posed in order to open the way for their ambitions and to encourage them to believe in themselves.

3.6.2.1 Interpretation of the Questionnaire's Results

The data gathered from the questionnaire have been presented and analyzed in the previous section. Accordingly, this part tries to summarize and interpret the findings according to the main research question raised in the beginning of the study. The first section of the students' questionnaire entitled "Students profile" that demonstrates the target sample of the present study which is D/HoH students of the (CYDL) at Biskra. Therefore, the whole students of forth year (16 students) volunteered to partake in the ASL Pro instructional SL courses. Although, the course is better to be exposed to small groups and that is why we separated them into two groups. Accordingly, this study is concerned with those 16 participants whom are 11 females and 5 males.

Moreover, most of the participants are of age 18 so they are mature enough to work with. Thus, this explains that most of the students have not succeeded in their academic career due to their disability. Nevertheless varied degrees of hearing losses existed in our sample so that the intended outcomes would reflect this variety of degrees, in addition to how each student perceived this learning experience and what encountered difficulties the participants face or other learning abilities they have improved. Generally, the results confirmed that the majority of the students have inheritable hearing loss

The participants reveal a diversity of motivation toward the English language, henceforth; all of them were interested to get involved with the intended ASL Pro instructional SL application. That is to infer, the great motivation reflects the participants intentions in seeking out further occasions of learning English, whilst, the participants with less motivation correspond with their willingness to examine their abilities of learning English or to enhance their achievement.

The findings of “E-learning Environment, use of ASL pro sign language tutorial” section shows that a great number of students use only on SL while communicating with others and consider it as their first language and they are obliged to master the exact signs in order to communicate easily with people. Respectively, the results also highlight that the learners often have what we call "Communication gap" between the teacher and the student, which prevent the learner from having the full understanding of the course content or even to interact during the lesson. The communication gap makes the learners anxious during the class, and this happen particularly with non-trained teachers who are not skillful in SL as well as dealing with students with SEN.

Based on provided results, the participants reveal a great dependency on teacher's instructions and the use of computer internet as a learning resource, however half of the

participants agreed that they face challenges in understanding the matter being studied. Progressively, the ASL Pro sign instruction provide useful and practical information in an attractive manner that helps students to concentrate. In addition, peer and collaborative learning is yet another significant aspect in delivering instruction with such application. Consequently, within delivering or receiving instruction the participants were active learners who seek to take advantage from the inside and outside resources.

The majority of participants assume to be technological users and supply prompted insights into their independent study practices in connection to the use of the computer internet. This is perhaps the main reason for their involvement and incentive within the implemented E-learning instructional sign courses, predominately, because they are motivated, eager, and interactive for such technological learning environment.

Practically, the implementation of this kind of E-learning instructional sign courses is considered the first initiative, in the context, to be applicable as an online learning environment that guarantees the features and attributes of E-education for students with LD specifically for D/HoH learners. It is important to realize that the examination of the participants' attitudes, behaviors, and opinions reveal significant results and basic findings for the overall conduction of the study. Based on the obtained results, the large proportions of participants were surveyed as computer internet users but they are not yet aware how to benefit from it in learning FSL.

By all means, the outcomes indicate that the great majority of participants found "the ASL Pro sign instruction absolutely helpful for learning the exact signs. They display positive attitudes toward the use of new materials in learning foreign languages using technology, and online sign dictionaries. Therefore, we emphasize the use of online sign dictionaries that help them to identify word signs easily and, hence; the overall learning attributes establish an

active E-learning environment in which they were able to improve on their learning deficiencies and enhance their motivation.

Reaching this point, the central aim of this work is to investigate the effectiveness of establishing an E-learning environment for D/HoH learners. In doing so, the inclusive attitudes and actual behaviors of the students toward the intended sign instructional program are the measurement devices for reaching the findings. As the results provided, the use of ASL Pro online sign instruction is an accessible and an effective learning tool through which the participants are able to decide upon the learning materials and provide them with learning opportunities to learn the huge number of signs. In like manner, "ASL Pro online sign instruction displayed a comfortable and an accessible learning material in which the participants enjoy studying. Consequently, the participants intend to be positivity satisfied with the overall experience of the ASL Pro learning as for they believe that they can develop their abilities for learning the English sign language.

3.7 Summary of Results

As a recapitulation, the present study is conducted in order to investigate the effects of implementing E-learning programs in promoting D/HoH achievements in TEFL situation. To accomplish such a result, the researcher exposed the target sample to the ASL Pro sign instructional online English dictionary with intended objectives. Therefore, the scope of the researched study is to elicit the participants' attitudes and perceptions toward implementing such method of learning. In an attempt to develop a credible piece of research, the researcher used two instrument as data collection methods; a pre-test and post-test as well as a questionnaire to the students.

The present research project attempts to impart the English learning process to be practiced within technological-enhanced environment, namely, through the online sign instructional program "ASL Pro" which targets to establish an active learning environment in which the participants are able to learn the exact sign of huge number of words. Moreover, the researcher intends to expose such learning method to students to investigate the advantageous of such learning environment and to modernize our educational system. For conducting this study, the researcher prepared suitable course content for the participants that encourage them to direct their reliance over other tools of language learning, in addition, to acquaint students of the intended method of learning as one of the effective techniques to promote the students' achievements in learning English.

The findings obtained from the analysis of the two implemented data gathering tools are to a great extent positive in considerable aspects. Initially, the pre-test and post-test exposed their level and a noticeable boost in their achievement after attending the treatment sessions. In addition, the students' questionnaire reveals that the majority of them consider E-learning as a priority of learning as for they show eager stances to promote their FSL capabilities. Yet, they lack the guidance and the suitable atmosphere to accomplish their learning goals. Furthermore, they display great motivation, readiness toward the intended ASL Pro sign instruction, thus; the ASL Pro addressed this type of learners, whom are challenging their disabilities, and contributed in activating their motivation in learning, although, they lack the necessary skills and guidance in using technology in an effective manner.

Therefore, with the limited opportunities that the students' are facing concerning the target language, it is important to clarify the areas of language deficiency that encounter students' performance in learning. The results of this study revealed that a number of

important challenges that face D/HoH students, which are the inability to communicate easily with SL, understand the teacher's instructions and the matter being studied. Based on these results, ASL Pro may inspire students to master the exact SL, because the implementation of the ASL Pro tools caters for students' comprehension abilities.

Most importantly, students have positive attitudes toward the implementation of "ASL Pro". Therefore, the ASL Pro tools are efficient and useful to practice English, mainly, in vocabularies, idiomatic collections and conversational phrases, the students express their satisfaction in browsing the program content and to set their learning objectives. Finally, they appraise upon the attractiveness of the new method in activating their readiness and motivation.

3.8 Pedagogical Implications and Recommendations

Learning foreign languages is challenging for D/HoH students; it is an area of inquiry for many researchers in the field of Deaf education. The purpose of this study was to investigate the impact of E-learning programs on D/HoH learners in enhancing their levels in learning English as a foreign language. Based on the findings of this study, we propose several pedagogical recommendations and implications that might be helpful in implementing E-learning materials successfully. Therefore, such learning method could help in improving teaching and learning process. We suggest a number of recommendations for the teachers, as well as stakeholders of D/HoH that are illustrated as follows:

Recommendations for Teachers and Stakeholders

- ✓ The process of acquisition and learning language should emphasize repetition, diverse activities, and challenging. The appropriate strategies can be used to cope with students' needs is technology.

- ✓ The necessity for teachers to develop bilingualism in SL in a disciplinary field for didactical purposes.
- ✓ The necessity to give a didactical preparation to teachers of D/HoH learners to enable them to design lessons, tasks and activities.
- ✓ Teachers are required to provide their learners with their feedback to overcome the major difficulties that they probably face in SL while acquiring the vocabulary knowledge
- ✓ Teachers should be encouraged to teach their students with instruction of SL programs to enhance the teaching and learning of basic technology.
- ✓ Teachers are advised to adapt to the new teaching and learning models of technology and not be resistant to new approaches.
- ✓ Teacher efforts and availability of E-learning materials used in learning will contribute to the success of teaching and learning process, students should be provided with English leveled materials.
- ✓ Stakeholders are asked to plan for education programs for Deaf students and their teachers to provide opportunities and training for both on how to promote the use of E-learning materials in teaching and learning.
- ✓ The administration is asked to provide technological aids at the school, mainly, the availability of computers and internet.
- ✓ Stakeholders should materialistically support such kind of E-learning learning programs.

In short, any attempt towards the integration of E-learning tools and CALL devises are of great advantageous for SEN learners to learn English. Thus, the "ASL Pro" online sign instructional dictionary is an example of this integration through which D/HoH learners are able to develop their FSL, specifically of English language learning based on this program.

Conclusion

The present chapter outlined the fieldwork of the present study. At the outset, it starts by setting a theoretical background concerning the research methodology, research approach and design used for this study. Substantially, it explicated the process that the researcher followed in the descriptive procedures of analysis and interpretation of the data collected methods. In fact, based on the quantitative approach, the descriptive analysis and interpretation of the obtained data draw upon the results in outlining the final synthesis with regard to the researchers' suggested hypothesis. Accordingly, this chapter was an attempt to answer the research questions and to confirm the suggested hypothesis.

General conclusion

As it has been mentioned before, the present study is designed to investigate the impact of E-learning programs on D/HoH learners in a TEFL context, mainly, to explore the effectiveness of applying an online program of sign instruction. In an attempt to integrate such method of learning, the present study sought to enroll D/HoH students, as study participants, within an E-learning environment. The central practice of this study is to motivate and encourage D/HoH learners to take initiative steps toward foreign language learning. In addition, it investigates the effectiveness of implementing online SL instructional tools to eliminate barriers preventing D/HoH learners from achieving their full potential. These barriers result from reduced information accessibility and affect language, cognitive development, and general education.

Within the spectrum of this study, the theoretical part is divided into two major chapters. The major concern of the first chapter is to provide a comprehensible outline concerning D/HoH people, their education and communication practices. Wherein the second chapter put forward the D/HoH learners at the center of a TEFL context and reveals clear

understanding of E-learning concept. Both theoretical chapters provide background information and previous reviewed studies about the two variables in use including the basic concepts, related terms, educational stances, and reveal the interrelationship between the two chapters.

To attain the expected goals, the current study adopted a quantitative method research approach. Thus, the third chapter lays forth the rational and functional methodological procedures for examining the researched variables; and their interrelationship; initially, it explains the rationality behind adopting the methodological approach and design of the study. Then, it discusses the applicable data collection methods.

From the obtained results, the researcher reported that the learners displayed positive attitudes and perceptions about the implemented method. In particular, the students confirmed the effectiveness of E-learning programs as shown in the questionnaire. More practically, they emphasized over the effectiveness of the implemented program "ASL Pro".

Consequently, the implemented E-learning materials constitutes an efficient solution for D/HoH learners, which provides effective and useful tools that contribute in developing learners FSL achievements. Precisely, the ASL Pro advocates an active learning environment in which learners are able to develop their SL abilities. In this respect, D/HoH English foreign language teachers should take into consideration the learners' needs to approach successful ways of teaching. Indeed, it is crucial to choose methods and materials that work with learners' level and interests. This can help them reinforce their ability in foreign language learning and to overcome their disability.

References

List of References

- Abdelouafi, H. (2018). *Teaching sign language to the deaf child*. Master Thesis, University Ahmed Draia, Department of English Language and Literature, Adrar.
- Allen, M. (Ed.). (2017). Simple descriptive statistics. *The SAGE Encyclopedia of Communication Research Methods* , 1 (4).
- Alothman, A. (2014). *Inclusive education for deaf students in Saudi Arabia: Perceptions of schools principals, teachers and parents*. PhD thesis, University of Lincoln. Retrieved from <http://eprints.lincoln.ac.uk/id/eprint/19026/>
- Anderson, K., Buck, M., Curran, D., Frederickson, M., Larson, C., Manson, E.,... Waldo, J. (2015). *Language and communication focused IEPs for learners who are deaf or hard of hearing*. Retrieved from <https://dcdcec.files.wordpress.com/2019/02/paulson2019.pdf>
- Babu, N., & Reddy, B. S. (2015). *Current trends in e-learning and future scenario*. *Mediterranean Journal of Social Sciences* , 6 (5), 484-489. Retrieved from <http://www.richtmann.org/journal/index.php/mjss/article/view/7514>
- Badem, N. Y., & Akbulut, F. D. (2019). A general view on utilization of computational technologies in computer assisted language learning (CALL). *Education Reform Journal* , 4 (2), 35-53. doi: [10.22596/erj2019.04.02.35.53](https://doi.org/10.22596/erj2019.04.02.35.53)
- Beauchamp, C., Bourque, L., Brimsacle, P., Brockstein, S., Buchanan, C., Coutu Vaillancourt, G., ... Shohet, L. (2006). *Special education: Issues of inclusion and integration in the classroom*. Retrieved from www.education.gouv.qc.ca/fileadmin/site_web/documents/ministere/organismes/CEL_A_Avis_AdaptationScolaire_ANG.pdf

- Becker, S. J. (2017). *An investigation of english learning of a sample of students who are deaf or hard of hearing and english learners and a sample of students who are english learners*. PhD Thesis, University of Northern Colorado, College of Education and Behavioral Sciences, Greeley, Colorado.
- BiGRiNCi, F. G. (2014). *The effectiveness of visual materials in teaching vocabulary to deaf students of efl*. Master Thesis, Hacettepe Üniversitesi, Department of English Language Education.
- Brentari, D. (Ed.). (2010). *Sign languages* (1st ed.). New York: Cambridge University Press.
- Brittney Andra Brooks. (2013). *Hearing conversation program ear disorders and hearing loss* [Image]. Retrieved from <https://slideplayer.com/slide/4442785/>
- Brown, J. D. (2001). *Using surveys in language programs* (1st ed.). Cambridge, UK: Cambridge University Press.
- Cambridge dictionaries online. (2019). Retrieved from <https://dictionary.cambridge.org/>
- Capuano, D., De Monte, M. T., Groves, K. M., Roccaforte, M., & Tomasuolo, E. (2011). A deaf-centred e-learning environment (DELE): Challenges and considerations. *Journal of assistive technologies* , 5 (4), pp. 257-263. doi: [10.1108/17549451111190669](https://doi.org/10.1108/17549451111190669)
- Cavaletto, B. J. (2015). *Computer-assisted vocabulary learning for deaf learners of foreign sign languages*. Master Thesis, University of North Dakota, Department of Linguistics, Grand Forks, North Dakota.
- Central Ohio Special Education Regional Resource Cente. (n.d.). *What is specially designed instruction?* Retrieved from <http://www.sst7.org/media/573e0a5ada793.pdf>

Centre for Surveillance, Epidemiology and Laboratory Services. (2013). *CDC's e-learning essentials: A guide for creating quality electronic learning*. Retrieved from

https://stacks.cdc.gov/view/cdc/13702/cdc_13702_DS1.pdf

Chomsky, N. (2006). *Language and mind* (3rd ed.). New York: Cambridge University Press.

Collins dictionary online. (2019). Retrieved from <https://www.collinsdictionary.com>

Creswell, J. W., Clark, V., Gutmann, M., & Hanson, W. (2003). *Advanced mixed methods research designs. Handbook of mixed methods in social and behavioral research*, 209-240. Retrieved from

https://www.researchgate.net/publication/235700625_Advance_Mixed_methods_Research_Designs

Crystal, D. (2003). *English as a global language* (2nd ed.). New York, Cambridge University Press.

Cued Speech Learning. (2017). *How Cued Speech works*[Image]. Retrieved from

<https://cuedspeechlearning.co.uk/>

Dolly, B., & spec, M. (2014). *Identifying a student with hearing impairment*. Retrieved from

<https://sites.trinity.edu/sensoryimpariment/identifying-student-hearing-impairment>

Domagała-Zyśk, E. (2012). *Overcoming difficulties in second language acquisition by deaf and hard of hearing students*. In M. Parchomiuk, & B. Szabala (Eds.), *Social Distance Towards Individuals with Disability as a Problem in Special Pedagog*. Lublin: Maria Curie-Skłodowska University Press.

- Domagała-Zyśk, E. (2016). *Teaching english as a second language to deaf and hard of hearing students*. In M. Marschark, & P. Elizabeth Spencer (Eds.), *The Oxford Handbook of Deaf Studies in Language*. Oxford University Press.
- Domagała-Zyśk, E., & Kontra, E. H. (Eds.). (2016). *English as a foreign language for deaf and hard-of-hearing persons: Challenges and Strategies*. Newcastle upon Tyne, England: Cambridge Scholars Publishing.
- Dornyei, Z. (2007). *Research methods in applied linguistics* (1st ed.). New York, NY: Oxford University press.
- Fajardo, I., Parra, E., & Can˜as, J. J. (2010). *Do sign language videos improve web navigation for deaf signer users? Journal of Deaf Studies and Deaf Education* , 15 (3), 242-262.
<https://doi.org/10.1093/deafed/enq005>
- Freeman, D., & Larsen-Freeman, D. (2008). *Language moves: The place of “foreign” languages in classroom teaching and learning*. *SAGE journals* , 32, 147-186.
<https://doi.org/10.3102/0091732X07309426>
- Goss, B. (2003). *Hearing from the deaf culture*. New Mexico State University. Intercultural Communication Studies.
- Goyal, S. (2012). *E-learning: Future of education*. *Journal of Education and Learning* , 6 (2), 239-242. Retrieved from
https://www.academia.edu/39944730/E_Learning_Future_of_Education
- HandSpeak. (2020). Retrieved from <https://www.handspeak.com/>

Hashim, H., Tasir, Z., & Mohamad, S. K. (2013). *E-learning envirement for hearing impired studentes . TOJET: The Turkish Online Journal of Educational Technology* , 12 (4), 67-70. Retrieved from <https://files.eric.ed.gov/fulltext/EJ1018030.pdf>

Hearing Loss Association of America. (2019). *Hard of hearing (HoH)*. Retrieved from <http://www.ncheatingloss.org/hoh.htm>

Hermans, D., Knoors, H., Ormel, E., & Verhoeven, L. (2008). *The relationship between the reading and signing skills of deaf children in bilingual education programs. Journal of Deaf Studies and Deaf Education*, 13 (4), 518–530.
<https://doi.org/10.1093/deafed/enn009>

Horton, W. (2001). *Leading to E-learning*. [e-book] Retrieved from https://books.google.dz/books?id=PPJx18AAQMC&printsec=frontcover&source=gb_s_ge_summary_r&cad=0#v=onepage&q&f=true

Individuals with Disabilities Education Act 2004. (2018, December 6). Retrieved from <https://sites.ed.gov/idea/building-the-legacy-idea-2004/>

Kadaruddin, K. (2017). *Use of computer-based learning multimedia at english departement of Universitas Sembilanbelas November Kolaka. International Journal of Education & Literacy Studies*, 5 (4), 49-56. <http://dx.doi.org/10.7575/aiac.ijels.v.5n.4p.49>

Kontra, E. H., & Kormos, J. (Eds.). (2008). *Language learners with special needs: An international perspective* (1st ed.). Great Britain: Multilingual Matters.

Kontra, E. H. (Ed.). (2017). *The foreign-language learning situation of Deaf adults: An overview. Journal of Adult Learning, Knowledge and Innovation* (1), 35-42.
doi: [10.1556/2059.01.2017.1](https://doi.org/10.1556/2059.01.2017.1)

- Kothari, C. R. (1980). *Reserch methodology: Methods and techniques* (2nd ed.). New Delhi: New Age International Publishers.
- Kumar, R. (2011). *Research methodology:A step-by-step guide for beginners* (3rd ed.). New Delhi: SAGE Publications Ltd.
- Levy, M. (1997). *Computer-assisted language learning: Context and conceptualization*. New York: Oxford University Press.
- Leybaert, J., Aparicio, M., & Alegria, J. (2016). *The role of cued speech in language development of deaf children. The Oxford Handbook of Deaf Studies, Language, and Education* , 1 (1), 1-16. doi: [10.1093/oxfordhb/9780199750986.013.0020](https://doi.org/10.1093/oxfordhb/9780199750986.013.0020)
- Li, Y., Peng, D., Liu, L., Booth, J. R., & Ding, G. (2013). *Brain activation during phonological and semantic processing of chinese characters in deaf signers*. In Gui Xue (Ed), *Frontiers in Human Neuroscience*, 7 (384), 123-133.
doi: [10.3389/fnhum.2014.00211](https://doi.org/10.3389/fnhum.2014.00211)
- Linda, W., & Alan W, B. (2010). *The complete guide to special education: Expert advice on evaluations, IEPs, and helping kids succeed* (2nd ed.). John Wiley & Sons.
- Louise, P. E. (2004). *Inclusive practice in south Africa:A deaf education perspective*. Master of Education by Dissertation, University of the Witwatersrand, Discipline of Special Education, Deaf Education, Johannesburg.
- Lyons, B. (2017). *How many people speak english, and where is it spoken?* Retrieved from <https://www.babbel.com/en/magazine/how-many-people-speak-english-and-where-is-it-spoken>

Marion, M., & Neelima, J. M. (2015). *Issues, challenges of inclusive education and strategies through ODL mode. National Seminar On Energizing Inclusive Education through ODL Mode*. Allahabad.

Martin, V. (2009). *Language learning and deafness*. Bachelor Thesis, Masaryk University, Department of English Language and Literature, Brno.

Masadeh, J. (n.d). *British sign language alphabet* [Image]. Retrieved from <https://www.pinterest.co.uk/pin/717057571896475246/>

McKee, R. (2003). *Report on a survey of deaf paraprofessionals' perspectives on mainstream learning contexts for deaf students in New Zealand*. School of Linguistics and Applied Language Studies, Faculty of Humanities and Social Sciences, New Zealand.

Moeller, A. K., & Catalano, T. (2015). *Foreign language teaching and learning*. (J. Wright, Ed.) *International Encyclopedia for Social and Behavioral Sciences* (2nd ed.), 9, 327-332. doi: [10.1016/B978-0-08-097086-8.92082-8](https://doi.org/10.1016/B978-0-08-097086-8.92082-8)

National Cued Speech Association. (2019). *Definition of Cued Speech*. Retrieved from <http://www.cuedspeech.org/cued-speech-definition>

National Dissemination Center for Children with Disabilities (NICHCY). (2010). *Deafness and hearing loss*. Retrieved from <https://files.eric.ed.gov/fulltext/ED572696.pdf>

Phillips, R., Menaught, C., & Kennedy, G. (2012). *Evaluating e-learning guiding research and practice* (1st ed.). New York: Routledge.

Pinantoan, A. (2013). *Inclusion, definition, advantages and barriers*. Retrieved from <https://www.opencolleges.edu.au/informed/teacher-resources/teaching-individuals-with-down-syndrome/inclusion-definition-advantages-and-barriers/>

Pizzo, L., & Chilvers, A. (2019). *Assessment of language and literacy in children who are d/Deaf and hard of hearing*. *Journal of education Sciences* , 9, 1-15.

doi: [10.3390/educsci9030223](https://doi.org/10.3390/educsci9030223)

Senghas, R. J., & Monaghan, L. (2002). *Signs of their times: Deaf communities and the culture of language*. *Annual Review of Anthropology* , 31, pp. 69-97.

<https://doi.org/10.1146/annurev.anthro.31.020402.101302>

Sign Community. (2013). *A brief history of british sign language (BSL)*. Retrieved from

<https://www.signcommunity.org.uk/a-brief-history-of-british-sign-language-bsl.html>

Sign Language Dictionary. (2019). Retrieved from <https://www.signbsl.com>

Signing Online. (2020). Retrieved from <https://signingonline.com/>

Signing Savvy. (2020). Retrieved from <https://www.signingsavvy.com/>

SignMaker. (2017). Retrieved from <https://signbank.org/signmaker.html>

SpreadTheSign. (2020). Retrieved from <https://www.spreadthesign.com/en.us/search/>

The National Institute on Deafness and other Communication Disorder (NIDCD). (2019).

American Sign Language | NIDCD. Retrieved from

<https://www.nidcd.nih.gov/health/american-sign-language>

Turiainen, P. (2018). *Promoting inclusion by easy-to-read language* [Image]. Retrieved from

[https://www.semanticscholar.org/paper/Promoting-Inclusion-by-Easy-to-read-](https://www.semanticscholar.org/paper/Promoting-Inclusion-by-Easy-to-read-Language-Turiainen/14e2d90747f603bc6ad4b12712eb854bff273015)

[Language-Turiainen/14e2d90747f603bc6ad4b12712eb854bff273015](https://www.semanticscholar.org/paper/Promoting-Inclusion-by-Easy-to-read-Language-Turiainen/14e2d90747f603bc6ad4b12712eb854bff273015)

University of Calgary. (2018). Audiograms [Image]. Retrieved from

<https://www.kuuloavain.fi/en/info/hearing-and-hearing-impairment/degree-of-a-hearing-impairment/>

Vaughn, S., & Linan-Thompson. (2003). What is special about special education for students with learning disabilities? *The journal of special education* , 37 (3), 140-147.

doi: [10.1177/00224669030370030301](https://doi.org/10.1177/00224669030370030301)

Vicars, B. (n.d). ASL University: Fingerspelling [Image]. Retrieved from lifeprint:

<https://www.lifeprint.com/asl101/fingerspelling/>

Wambui, M. L. (2015). *Determining classroom communication and academic performance of learners with hearing impairment: A case of Kambuii school for the deaf in Kiambu*. Master Thesis , Kenyatta University, Department of Special Needs Education, Kenya.

Watson, S. (2019). *What is special education*. Retrieved from ThoughtCo:

<https://www.thoughtco.com/what-is-special-education-3110961>

Widowsen. (2009). *Defining issues in english language teaching*. New York: Oxford University Press.

World Health Organization. (2019). *Deafness and hearing loss*. Retrieved from

<https://www.who.int/news-room/fact-sheets/detail/deafness-and-hearing-loss>

World Report on Disability. (2011). World Health Organization. Retrieved from

https://www.who.int/disabilities/world_report/2011/report.pdf

Zhang, D., Zhao, J. L., Zhou, L., & Nunamaker, J. F. (2004). *Can E-Learning replace classroom learning*. *Communications of the ACM*, 47 (4), 75-79.

doi: [10.1145/986213.986216](https://doi.org/10.1145/986213.986216)

Appendices

Appendix 01

The Ethical Research Approval from the Department Administration

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التعليم العالي والبحث العلمي

جامعة محمد خيضر - بسكرة -
كلية الآداب واللغات
قسم الآداب واللغات الأجنبية
شعبة الإنجليزية
رقم : 1042/ش.ا. 2019

Université Mohamed Khider -
-Biskra -
Faculté des lettres et Langues
Département des langues étrangères
Filière d'anglais

إلى السيد : مدير مدرسة الأطفال المعاقين سمعيا

الموضوع : طلب تصريح لإجراء تريض

بشرفني ان ألتمس من سيادتكم تمكين الطالبة مصمودي خديجة صاحبة رقم التسجيل: 35050850/15 من اجراء تريض مع تلاميذ مؤسستكم .
أحيطكم علما أن هذه الطالبة تدرس لغة انجليزية في السنة ثانياة ماستر بجامعة محمد خيضر بسكرة وهي بحاجة لهذا التريض لاتمام مذكرة تخرجها .
وفي انتظار قبول هذا الطلب تقبلوا منا فائق التقدير والاحترام وخالص الشكر والامتنان .

بالموافق 20/05/2020
دراسة م. هادي
نائب العميد المكلف بما بعد التدرج والبحث
العلمي والعلاقات الخارجية

رئيس الشعبة محمد خيضر بسكرة
مسؤول شعبة الإنجليزية
د. عمار ربيع

رئيس مصلحة الإدارة
والخدمات
بن محمد بن يحيى

Appendix 02

The Ethical Research Approval from Directorate of Social Solidarity and Women's Issues

الجمهورية الجزائرية الديمقراطية الشعبية
وزارة التضامن الوطني والأسرة وقضايا المرأة
تعهد

الاسم:
تاريخ و مكان الميلاد: 1999 / 05 / 03
المؤسسة:
موضوع البحث:
أتمهد:

- أن ألتزم بالطابع البري للوثائق و المعدليات و المعنومات التي ستوضع تحت تصرفي و أن لا استعملها إلا إطار البحث موضوع تربصي بمؤسساتكم
- و ان أفتح وزارة التضامن و الأسرة و قضايا المرأة نسخة من العمل المنجز

توقيع المعني:
.....

مصالح عليية من طرف مصالح الجامعة
03 7 7919
مسؤول شعبة الإنجليزية
ابو حاتم الطيب

Appendix 03

Pre-test

Task One: Identify the nouns and verbs from the list below

Book Write Bag Speak Know School Break Cat Boy Take Table

Nouns	Verbs
<p>.....</p> <p>.....</p>	<p>.....</p> <p>.....</p>

Task Two: conjugate the verb “to be” in simple present

I

He

We

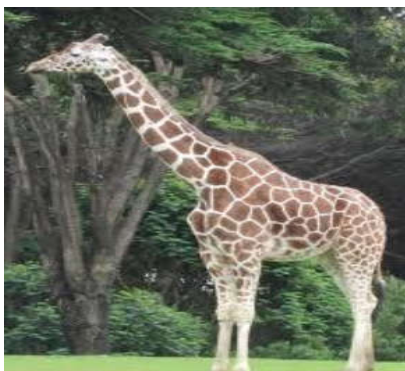
You

She

They

It

Task Three: Look and match with the equivalent picture



Tomato

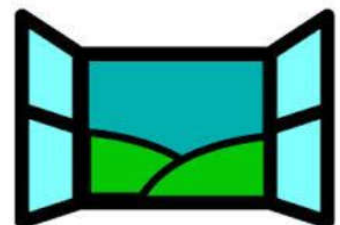
Giraffe

Apple

Window

Horse

Dog



Appendix 04

Post-test

➤ Look carefully at the list and focus on the signs of each word

Nouns	Verbs	Adjectives
Jacket	Wear	Cold
Jungle	Communicate	Long
Food	Eat	Hungry
Pizza	Travel	Delicious
Home	Understand	Narrow
School	Study	Funny
Pilot	Wash	Angry
Health	Read	Fast
Desire	Drink	Calm
Father	Close	Heavy
Night	Search	Happy
Sea	Have	Sad
Family	Include	Gentle

➤ Read the phrases bellow and focus on the signs of each one

- Close your book.
- We have a test tomorrow.
- My car is bright red.
- I am a teacher.
- I have a cold.
- I feel fine.
- Are you hungry?

➤ Draw a line from each word/sentence to the matching picture

Jacket

Family

Baby

House

Moon

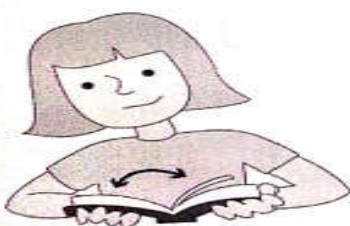
Bird



*The food is delicious

*I have a cold

*Open your book



Appendix 05

Students' Questionnaire

You are kindly requested to answer this questionnaire, which is a part of my Master dissertation. This latter is about 'The impact of E-learning programs on Deaf and Hard of Hearing learners in a TEFL situation'. Your contribution will be of immense importance for the success of my study. Please tick the appropriate answer(s) and write full statement(s) whenever necessary. Be sure that your responses will be anonymous and will be used for research purposes only. Thank you for your time effort and collaboration.

Khadija

Section One: Student Profile

Q1: How old are you?

Q2: Please specify your gender: Male Female

Q3: Degree of hearing loss:

mild

moderate

moderately severe

severe

profound

Q4: Do you use hearing aids

Yes

No

Q5 : Do you have Deaf/Hard of Hearing relatives in your family ?

Yes

No

Q6: Do you like English language? Yes No

Section Two: Communication through English

Q1: How do you communicate with other people?

Q2: Do you understand the teacher when explaining the lesson? Yes

Q3: On what you depend when studying a topic

The teacher The Book The Internet

Q4: What are the challenges you face during English sessions

- a) Understand the matter being studied
- b) Communicating with the teacher
- c) Being misunderstood

Q5: Have you ever tried to overcome these difficulties? Yes

Q6: Do you use computer internet? Yes No

If yes, where?.....

Q7: Do you think that using technology /computer programs helps you in learning foreign languages?

Yes No

Q8: Do you like to go on a course with new methods materials, activities the meet your needs? Yes

No

Q9: What is your opinion about the new method of learning using ASL Pro Program?

Q10: Say whatever you wish being Deaf/Hard of Hearing Learner.

.....
.....

Appendix 06

Student's Questionnaire: Piloting Stage

You are kindly requested to answer this questionnaire, which is a part of my Master dissertation. This latter is about 'The impact of E-learning programs on Deaf and Hard of Hearing learners in a TEFL situation'. Your contribution will be of immense importance for the success of my study. Please tick the appropriate answer(s) and write full answer whenever necessary. Be sure that your responses will be anonymous and will be used for research purposes only. Thank you for your time effort and collaboration.

يرجى التفضل بالإجابة على هذا الاستبيان ، وهو جزء من أطروحة الماستر الخاصة بي. يتعلق هذا الأخير بـ "تأثير برامج التعلم الإلكتروني على المتعلمين الصم وضعاف السمع في تدريس اللغة الإنجليزية كلغة أجنبية". ستكون مساهمتك ذات أهمية كبيرة لنجاح دراستي. يرجى وضع علامة على الإجابة (الإجابات) المناسبة وكتابة الإجابة الكاملة عند الضرورة. تأكد من أن ردودك ستكون مجهولة المصدر وسيتم استخدامها لأغراض البحث فقط. شكرا لك على وقتك وجهدك وتعاونك.

Mohammed khider University of Biskra
Faculty of Forieng Languages
English Language Section

Khadija

Section One: Student Profile

Q1: How old are you?

1. كم عمرك ؟

Q2: Please specify your gender:

2. قم بتحديد جنسك

Male

ذكر

Female

أنثى

Q3: Degree of hearing loss:

3. درجة فقدان السمع:

• mild

خفيفة

• moderate

معتدلة

• moderately severe

شديدة إلى حد ما

• severe

شديدة

• profound

عميقة

E-LEARNING PROGRAMS FOR DEAF AND HARD OF HEARING LEARNERS

Q4: Do you use hearing aids?

4. هل تستخدم السماع؟

Yes

نعم

No

لا

Q5 : Do you have Deaf/Hard of Hearing relatives in your family ?

5. هل لديك أقارب صم/ صعاب السمع من عائلتك ؟

Yes

نعم

No

لا

Q6: Do you like English language?

6. هل تحب اللغة الإنجليزية ؟

• Greatly

إلى حد كبير

• Rather yes

نعم

• I do not mind

أنا لا أمانع

• Rather not

لا

• Hate it

لا أحب

Section Two: Section two: E- learning environment use of "ASL pro Sign

Language Tutorial

Q1: How do you communicate with other people?

1. كيف تتواصل مع الآخرين ؟

• Spoken language

اللغة المتحدثة

• Written language

اللغة المكتوبة

• Sign language

لغة الإشارة

• A combination of all above

مزيج من المذكور أعلاه

E-LEARNING PROGRAMS FOR DEAF AND HARD OF HEARING LEARNERS

Q2: The degree you understand the teacher when explaining the lesson

2. درجة فهمك واستيعابك للأستاذ عند شرحه للدرس

- | | | | |
|--------------------|--------------------------|--------------------------|---------|
| • Very good | <input type="checkbox"/> | <input type="checkbox"/> | جيد جدا |
| • Good | <input type="checkbox"/> | <input type="checkbox"/> | جيد |
| • Medium | <input type="checkbox"/> | <input type="checkbox"/> | متوسط |
| • Don't understand | <input type="checkbox"/> | <input type="checkbox"/> | لا أفهم |

Q3: When studying a topic you

3. عند دراسة موضوع ما

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------|
| • Revise from the text book | <input type="checkbox"/> | <input type="checkbox"/> | تراجع من الكتاب المدرسي |
| • Depend only on the teacher | <input type="checkbox"/> | <input type="checkbox"/> | تعتمد على الأستاذ |
| • Use the internet to look for | <input type="checkbox"/> | <input type="checkbox"/> | تستعين بالانترنت للبحث |

Q4: What are the challenges you face during English sessions

4. ما هي التحديات والصعوبات التي تواجهها أثناء حصص الإنجليزية؟

- | | | | |
|---------------------------------------|--------------------------|--------------------------|---------------------|
| • Understand the matter being studied | <input type="checkbox"/> | <input type="checkbox"/> | فهم المادة المدروسة |
| • Communicating with the teacher | <input type="checkbox"/> | <input type="checkbox"/> | التواصل مع الأستاذ |
| • Being misunderstood | <input type="checkbox"/> | <input type="checkbox"/> | لا يتم فهمك |
| • Other | <input type="checkbox"/> | <input type="checkbox"/> | غيره |

Q5: Have you ever tried to overcome these difficulties?

5. هل حاولت يوما مواجهة هذه الصعوبات؟

- | | | | |
|-----|--------------------------|--------------------------|-----|
| Yes | <input type="checkbox"/> | <input type="checkbox"/> | نعم |
| No | <input type="checkbox"/> | <input type="checkbox"/> | لا |

Q6: Do you use computer internet?

6. هل تستخدم الكمبيوتر/الانترنت؟

- | | | | |
|------------------|--------------------------|--------------------------|----------------|
| • Yes, at school | <input type="checkbox"/> | <input type="checkbox"/> | نعم في المدرسة |
| • Yes, at home | <input type="checkbox"/> | <input type="checkbox"/> | نعم في المنزل |

E-LEARNING PROGRAMS FOR DEAF AND HARD OF HEARING LEARNERS

- Yes, elsewhere في مكان آخر
- No لا

Q:7 Do you think that using technology /computer programs helps you in learning foreign languages?

7. هل تظن أن استخدام التكنولوجيا وبرامج الكمبيوتر تساعدك على تعلم اللغات الأجنبية؟

Q8: Do you like to go on a course with new methods materials, activities the meet your needs?

8. هل ترغب أن تكون ضمن درس بمنهجيات ووسائل ونشاطات جديدة تتوافق مع احتياجاتك؟

- Strongly agree موافق بشدة
- Agree موافق
- Neutral محايد
- Disagree معارض
- Strongly disagree أرفض بشدة

Q9: What is your opinion about the new method of learning using ASL Pro Program?

9. ماهو رأيك حول الطريقة الجديدة في التعلم باستخدام برنامج تعليم لغة الإشارة الإنجليزية؟

- Absolutely helpful مفيدة للغاية
- Somehow helpful مفيدة إلى حد ما
- Not helpful غير مفيد

Q10: Say whatever you wish being Deaf/Hard of Hearing Learner.

10. قل ما يخطر لك بصدفتك متعلم أصم / ضعيف السمع.

.....

.....

Thank you for your assistance ☺

المخلص

يطرح تعلم اللغة الأجنبية عددًا من التحديات التي تختلف وفقًا لمجموعة واسعة من المتغيرات. تتمثل الصعوبة الإضافية التي تواجه المتعلمين من الصم وضعاف السمع في عدم القدرة على الاعتماد كليًا على القناة السمعية كوسيلة للمعلومات اللغوية. علاوة على ذلك، فإن تعلم اللغة الأجنبية في الوقت الحاضر لم يتم تسهيله من خلال وسائل التعلم المناسبة، لاسيما في سياق الاحتياجات الخاصة. أصبح تدريس اللغة الإنجليزية كلغة أجنبية للأفراد الصم وضعاف السمع موضوعًا يستحق البحث من قبل العديد من الباحثين في هذا المجال. في غضون ذلك، يتيح لهم ذلك أن يصبحوا مؤهلين في اللغة الهدف. لذلك، تناولت الدراسة الحالية أسلوبًا تعليميًا مبتكرًا يمثله برنامج كمبيوتر عبر الإنترنت كمكمل تقني لتقديم المواد التعليمية. تقدم هذه الورقة بشكل أساسي نتائج دراسة تهدف إلى تقييم فعالية استخدام برامج التعلم الإلكتروني في تدريس اللغة الإنجليزية كلغة أجنبية لمتعلمي لغة الإشارة. وبالتالي، فإن الفرضية المقترحة بفحص هذه الدراسة توضح أن وسائل التعلم الإلكتروني تعد طريقة فعالة لتعليم اللغة الإنجليزية للطلاب الصم وضعاف السمع، بالإضافة إلى ذلك؛ فقد أظهر المشاركون مواقف إيجابية تجاه الطريقة المنفذة. في نطاق هذه الدراسة، تم تحديد الأطر النظرية والعملية لمناقشة الطريقة المحددة فيما يتعلق بالإجراءات المنفذة. من الناحية المنهجية، تم اعتماد نهج كمي، من حيث الأهمية؛ تم استخدام طريقتين لجمع البيانات وهما الاختبار القبلي والاختبار البعدي والاستبيان. بعد تفسير البيانات التي تم جمعها، تبين أن الفرضيات المذكورة قد تم تأكيدها على أن البرنامج المنفذ هو وسيلة فعالة للتعلم تساهم بشكل إيجابي في تعزيز تحصيل المتعلمين الصم وضعاف السمع للغة الإشارة.