

Deaf students and the challenges they face in higher education

DOI: 10.46932/sfjdv4n6-021

Received on: August 15th, 2023

Accepted on: September 15th, 2023

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ABSTRACT

This paper highlights the problems that deaf students face in their inclusion and development in higher education. This research involved two stages: the first consisted of an analysis of academic publications focused on the subject. Based on Cooper's (1998) taxonomy on the review of educational literature, the researchers selected 24 publications in English and 10 in Spanish. The second stage of the research involved a series of in-depth interviews with a deaf student, based on the methodological perspective known as a life story. The findings reveal the communicative, cognitive and social barriers faced by these students, but above all, it is clear that the main problem deaf students face is not the lack of human and material infrastructure to support their learning, or even the hearing impairment itself, but rather the inability of the hearing academic community to understand, comprehend and empathize with this student sector.

Keywords: higher education, deaf students, deaf culture, sign language, inclusive education.

1 INTRODUCTION

Education is one of the most efficient means for social and individual development. As Barra Aeloíza and Muñoz Vilugrón (2020) point out, young people who aspire to higher education see in it "the possibility of social and economic realization" (p. 87). Unfortunately, there are some sectors that do not have the same opportunity as the rest of the population to fully access a formal education. One such group includes people with disabilities.

In Mexico, it is estimated that 6.2% of the population is affected by some kind of disability (Universidad Nacional Autónoma de México, 2021). This sector of the population includes people with hearing disabilities. Because this type of condition is not visually evident, people who suffer from it tend

to go easily unnoticed. This is why this sector is one of the minority groups classified as invisible (Romero Pérez, 2011, p. 164).

2 INCLUSIVE EDUCATION AND SPECIAL EDUCATION

According to the most recent National Survey of Demographic Dynamics:

In Mexico there are 2.4 million deaf people, more than 84 thousand are under 14 years of age; of these, 46 percent, i.e., almost half, do not attend school, and of the more than 124 thousand deaf young people between 15 and 29 years of age, 28 percent have had no education whatsoever. (Cámara de Diputados, LXV Legislatura, 2021)

Faced with this problem, deaf students have two options: special education schools, reserved exclusively for students with this kind of disability, or inclusive schools where students with and without disabilities share the same educational space. These two types of schools are called Regular Education Support Service Units and Multiple Attention Centers (MACs). MACs have adapted plans for students with disabilities, but they only offer basic education and a program at the end called Training for Life and Work, which consists of providing skills for the following activities:

- Sewing, dressmaking and embroidery
- Personal styling and wellness
- Food and beverage preparation
- Wooden furniture manufacture
- Manufacture of metal and wood products
- Cleaning services
- Bakery and confectionery
- Screen printing
- Food service support
- Gardening services, cultivation of fruits and edible plants
- Support services for office work (Gobierno de México, 2023)

The current global trend is toward inclusive education. Muñoz points out that the: “Inclusion of students with disabilities in mainstream schools confers important psychological advantages, and caters much more to intellectual, social and emotional needs through normal and natural interaction with a diverse group of students” (Muñoz, 2009, p. 7).

Even if in principle inclusive education provides many benefits, it is necessary to implement actions to improve the educational experience, because in practice “the term inclusion has been confused with the physical placement of deaf students in ordinary classrooms” (Santos Caicedo et al., 2008, p. 123).

The **objective** of this paper is to identify the conditions under which deaf university students carry out their activities and to envisage potentially useful actions to favor their inclusion and access to a full higher education.

3 METHODOLOGY

This research work encompassed two phases. The first stage comprised an analysis of scientific articles focused on the topic of deaf university students at the higher education level; the second one involved a series of interviews with a deaf student at the Benemérita Universidad Autónoma de Puebla (BUAP) in Mexico, as explained below.

3.1 FIRST PHASE: SELECTION AND ANALYSIS OF ACADEMIC ARTICLES FOCUSING ON ANALYZING THE PROBLEMATIC SITUATION FOR DEAF STUDENTS IN HIGHER EDUCATION

The researchers carried out a search of research articles using Google Scholar and the Digital Library of the Autonomous Metropolitan University (BIDIUAM) platforms, both of which are linked to various databases with free access to academic research papers.

The researchers set two conditions for the searching and selection of the articles: the publications had to be open access or available in the BIDIUAM, and they had to specifically address the issue of deaf students in higher education. The searches used the terms “Deaf students in higher education” and “Estudiantes sordos en educación superior.”

The authors set a maximum review limit of 50 papers. Based on the selection of publications, they carried out a careful review “to identify issues central to a field” (Cooper, 1988, p. 109). The analysis involved carefully reading each of the articles. The researchers did not use qualitative analysis software such as *ATLAS.ti* or *NVivo*.

Finally, the researchers selected 24 English and 10 Spanish papers and conducted the review in two stages. The first involved ascertaining the communication and integration barriers that deaf students face in inclusive schools, as well as the nature of the cognitive challenges in their professional training; the second included determining the actions taken in response to the needs of deaf students in various universities. The researchers identified two categories of support, some of them aimed at facilitating learning and others focused on facilitating the integration of deaf students into school life. Both types of support are required. This paper presents the results of both reviews below.

3.1.1 Communicative barriers and cognitive challenges in the education of deaf students in higher education

Since the educational process is essentially one of communication and interaction, this paper can state the following: each type of disability implies some kind of *basic inclusion actions* aimed at overcoming the barriers that affect the educational process. Thus, students with motor disabilities require facilities adapted to their mobility needs, such as ramps, lifts, special toilets, etc., while blind students need sound or tactile signage, teaching materials in Braille, etc. In the case of students with a hearing impairment, the fundamental inclusion support consists of those actions aimed at facilitating communication and interaction. This study refers to these types of actions as *priority inclusion supports*, which are different for each type of disability. In the case in question, the *priority inclusion support* is the involvement of *sign language interpreters*, who are skilled in the task and, if possible, have basic knowledge in the field of study. Although it is not the sole type of support required, it is perhaps the most important.

To further understand the situation deaf students, face when joining an inclusive educational institution, it is important to highlight the differences between sign communication and oral communication, as well as their implications for reading comprehension and other cognitive tasks. As Anzola et al. (2006) point out, “Bilingual education in the case of the deaf is seen as an immersion program in which all curricular education is given in a language other than the mother tongue” (p. 359). Looking at the challenge in this way is the first step toward a better understanding of the problem.

3.1.2 Visual-gestural communication, audio-oral communication and reading comprehension

The main barrier that deaf students face when joining an inclusive school is the communication and cognitive challenges that it brings. It is important to understand that, for students who are deaf from birth, sign language is their native language and, as such, is fully linked to their cognitive development. In a similar way to how oral communication is connected to cognitive development in hearing people, sign language is associated with cognitive development in deaf persons.

Tovar points out that sign language is a true natural language that possesses:

Its own structure and lexicon, which allow for an indefinite number of statements on any aspect of reality or fantasy, and whose only difference with oral languages is that they take place in three-dimensional space and therefore use the visual-gestural communication channel. (As cited in Barra Aeloíza and Muñoz Vilugrón, 2020, p. 96)

Thus, for deaf people, “the modality of receiving and transmitting their language is visual-gestural rather than hearing-oral” (Rincón Infante, 2020, p. 4). This obvious difference in communication codes and methods of expression makes it hard to fully interpret the two languages and, even though both are

true communication systems, each have different codes and grammatical logics. Gutiérrez and Ball (2009) state that “the presumed errors found in the writing of the Deaf corroborate the underlying existence of other codes” (p. 1000).

This makes it more difficult for deaf students in higher education to understand the full range of lectures and oral presentations. In addition, concepts and technical terms specific to different areas of knowledge do not always have an equivalent in sign language. Brett (2010) states that “The sophisticated language and conceptual requirements of higher education are not well accommodated through the dominant support models of Auslan (Australian sign language) interpreting and notetaking” (p. 4)

Da Costa Rocha (2018) notes that during her experience as an interpreter and teacher at the Universidade Federal de Minas Gerais, deaf students frequently asked her for the meaning of terms such as “epistemology” or “metaphysics,” for which there was no reference in Brazilian sign language. It was then that, together, the teachers, researchers and, above all, the deaf students decided to create new signs to refer to these concepts.

Another issue for consideration is reading comprehension. Anzola et al. (2006) state that “for a deaf person, bilingualism is determined by the mastery of the written language, more than by oral competence, and by the use of VSL [Venezuelan Sign Language]” (p. 360).

Written language tends to use a broad and specialized vocabulary when it comes to texts in higher education, so that “one of the biggest difficulties of accessibility for deaf people to the hearing world is linguistic competence in the written modality” (Barra Aeloíza & Muñoz Vilugrón, 2020, p. 88). Thus, the development of linguistic skills for reading comprehension is a priority action in the education of deaf students.

In order to support the deaf population in “developing competences that will enable them to access a university degree” (Gómez Tovar, 2014, p. 99), the Universidad Juárez del Estado de Durango in Mexico launched a remedial course for deaf students. The aim was to “provide for the strengthening and development of competences in areas such as: writing and reading comprehension in Spanish” (Gómez Tovar, 2014, p. 99). Gómez Tovar (2014) notes that, during the course, the deaf students were accompanied by an interpreter in their educational process, so they got to know the academic and administrative procedures of the university and experienced “the everyday life at the university” (p. 99). Thus, the remedial course not only reinforced language skills, but also integrated them into school life.

Finally, educators must keep in mind that, for the deaf community, “the dominant language... [must be treated] as a second language” (Alquati Bisol et al., 2010). It is also important to be aware that each country has its own sign language.

3.1.3 The cognitive challenges for deaf students in higher education

One of the most important goals of the educational process in general is the development of cognitive and metacognitive skills. This is an unavoidable and universal responsibility for an educational institution of any type and level. As Enrique González (2009) points out:

Metacognitive issues refer to the capacity of human beings to be aware of their own cognitive activity, simultaneously with the performance of an intellectually demanding task. And affective dimensions refer to attitudes, emotions and beliefs, both about oneself and in relation to the discipline and to other people. (p. 132)

Therefore, while the development of language skills is a priority for deaf learners, the development of metacognitive skills should not be neglected, as they are the basis of thinking (Barra Aeloíza & Muñoz Vilugrón, 2020, p. 88). According to Gibbs and Schirmer (1989), there is “a strong relationship between reading ability and metacognitive skills in deaf high-school students” (as cited in Richardson et al., 2000, p. 169). Gibbs and Schirmer found that “both deaf and hearing readers with high reading scores also carry a strong awareness of what is going on in the text that they are reading. They recognize errors and contradictions; they look for high truth value. In short, they are metacognitively sophisticated” (as cited in Strassman, 1997, pp. 144-145).

So, the cognitive challenges for a deaf learner are, on the one hand, to assimilate the contents of one’s own field of knowledge (just like their hearing classmates) and, simultaneously, develop the linguistic competences essential for reading comprehension and oral presentations in class. It is therefore necessary that:

An educational model focused on cognitive and linguistic issues together with the provision of meaningful learning experiences, involving not only academic content but also social, emotional and self-knowledge skills, and the re-connection with their hearing families as an axis of affective support, could have a substantial impact on the integral development of deaf people accessing higher education. (Barra Aeloíza & Muñoz Vilugrón, 2020, p. 89)

On the other hand, there are factors that contribute to the early development of language skills. Anzola et al. (2006) state that the timing of language acquisition is very important “as it influences not only cognitive functioning, but also other aspects of neuro-psychological and socio-cultural development” (p. 360).

For Marschark, deaf students who present obstacles in their performance at higher level may be due to both “inadequate early intervention (in infancy and childhood) and serious deficiencies in teacher preparation for elementary and secondary level schooling” (as cited in Lang, 2002, p. 275). Thus, early intervention is a critical factor in the academic success of deaf students (Lang, 2002, p. 275).

According to Barra Aeloíza and Muñoz Vilugrón (2020), “deaf children of deaf parents have better skills and academic levels for learning spoken and written language” and “[they] do not have the socio-emotional problems typical of deaf children of hearing parents” (p. 96). However, this population encompasses only 5%, so the rest “are born into hearing parents’ families with little or no previous experience of deafness who require different types of support to provide their children with access to sign or spoken language” (p. 96). Thus, only a minority of deaf students entering higher education possess potentially adequate language skills development.

3.1.4 Deaf culture and the challenges for the inclusion of deaf students in the school community

Another factor for the success of the educational process is the successful interaction of the learner with the school environment. For deaf students in inclusive schools, this aspect is a major challenge.

Several studies have shown that deaf students often feel isolated, rejected or misunderstood. They feel discriminated against and isolated and therefore do not dare to ask questions in class, which also affects their self-esteem (Frumos & Roşu, 2019, p. 208). Braun et al., (2018) state that their hearing classmates frequently observe deaf students as “not able,” (p. 5).

The reason for this is that the community at large is unaware of what it means to be deaf, especially in an environment largely dominated by the hearing population. Taking an anthropological view on deaf culture, instead of a pathological one, focusing on hearing impairment, contributes to improving the integration of deaf students into the university community. From this perspective, “the deaf are a linguistic minority comparable to other non-native Spanish speaking children, with the difference that the modality of receiving and transmitting their language is visual-gestural instead of hearing-oral” (Rincón Infante, 2022, p. 4). Thus, the deaf community is recognized as “a cultural minority” characterized by visual-gestural communication “that distinguishes them as a community that interacts with a speaking-hearing community” (Barra Aeloíza & Muñoz Vilugrón, 2020, p. 90). Sign language is the binding factor that characterizes this cultural community (Barra Aeloíza & Muñoz Vilugrón, 2020, p. 96). “Viewing deafness from a socio-anthropological perspective means seeing hearing impairment not as a health problem but as a cultural difference” (Barra Aeloíza & Muñoz Vilugrón, 2020, p. 96).

The deaf person is then “a different sociolinguistic being, who requires different pedagogical alternatives and who uses as a mother tongue, the spatial visual language, recognised as sign language” (Rincón Infante, 2022, p. 4). Salazar -Clemeña (2006) notes that the socio-cultural vision considers “deafness as a culture beyond hearing impairment, and the community of the Deaf individuals as a cultural and linguistic minority” (p. 44). Viewing the phenomenon in this way favors “inclusion as a form of interaction between the deaf and hearing world” (Salazar Durango, 2018, p. 211).

For Alquati Bisol et al. (2010), being in an environment where deafness and visual communication

are not the dominant norm represents a cognitive, emotional and social overload for the deaf learner, but at the same time allows them to expand their experiences that previously “were restricted to the deaf community” (p. 169). It is about creating an environment that promotes the full development of their “cognitive, social, cultural and linguistic” potential (Rincón Infante, 2022, p. 4). As Stefan Kermit and Holiman (2018) point out: “Academic and social inclusion should be viewed as intertwined aspects of what being a student means for all students, not only those who are deaf or disabled” (p. 166).

The aim is to strengthen the full integration of deaf students and encourage their inclusion in higher education. Let us assume that “There is no risk but richness in linguistic and cultural diversity, provided that contexts of communication between differences are created” (Gómez Tovar, 2014, p. 95).

The discussion thus far provides a perspective on the vicissitudes and challenges that deaf learners face when they are placed in inclusive education settings. Below, this paper provides a number of strategies and actions applied in a variety of contexts to strengthen truly inclusive education.

3.1.5 Strategies and actions to promote learning and strengthen the inclusion of deaf students in higher education

In this research phase, the review of the selected articles allowed for identifying the following strategies and actions applied in different countries to support the learning and integration of deaf students in higher education.

i. The Involvement of Sign Language Interpreters. The main support mentioned within the analyzed documents is *the involvement of sign language interpreters*, that is, the priority support of inclusion for deaf students. Thus, out of the 34 documents examined, 28 repeatedly refer to the involvement of sign language interpreters and the predominant role they play in the educational process. Antia and Kreimeyer state that interpreters facilitate deaf students’ communication and understanding in educational contexts with both their teachers and their hearing peers (as cited in Frumos & Roşu, 2019, p. 200).

However, it is very important that interpreters must have the required training. According to one study, “many of the interpreters lacked the skills or training necessary to interpret at university level” (Hyde et al., 2009, p. 87). This is why Napier and Barker (2004), suggest that interpreters should be university-trained and familiar with the specific topics and concepts of the subject area they interpret (p. 236). It is worth mentioning that there are two ways of interpreting sign language: one is free (more reliant on gesticulation) and the other literal (based on spelling out words in sign language). Interpreters must be able to switch between the two of them according to the content and conditions of the interpreting. According to Frumos and Roşu (2019), learners prefer a free interpretive approach in a more general situation such as a social gathering, but in academic conference situations they prefer a literal approach

to the use of the manual spelling of technical vocabulary (p. 200).

It is important to note that while the role of sign language interpreters is irreplaceable, it also has limitations. When an interpreter is better trained and more familiar with the content, their contribution will be more effective.

ii. Note-Taking. Even with the involvement of interpreters, the challenge for deaf students remains a big one. For example, when paying attention to the teacher's presentation through the interpreter, it is difficult for the student to take lecture notes efficiently. It is hard for the student to both effectively follow the lecture and take notes (Richardson, 2008, p. 168). That is why note-taking support is another fundamental element in the educational process. It is complicated even for hearing students to take notes and listen to the teacher's explanation. This is due to *split attention*. This phenomenon occurs when the learner is required to attend to different sources of information simultaneously. Clark and Mayer warn that educators should avoid causing *split attention* because it forces the learner "to waste precious cognitive processing on trying to coordinate two disparate sources of information" (Clark & Mayer, 2016, p. 100). In such cases, the cognitive load increases and learning becomes more difficult. This happens to any student, deaf or not.

Note-taking is thus another support for deaf students. A lack of support in this respect could lead to "difficulties in integrating different parts of the curriculum" (Richardson et al., 2000, p. 168).

iii. Captioning of Classroom Presentations and Lectures. The use of self-generated captions during lectures is another useful resource for deaf learners. According to Brett (2010), "a support model involving the provision of live captions has been successfully trialled at an Australian university" (p. 4). After that experience, such a resource became "the dominant mode of support for the university's students with profound hearing impairments" (Brett, 2010, p. 4).

In some cases, the automatic generation of real-time captioning is offered as an alternative in the absence of interpreters. Lang (2002) states that "The most common types of support services include tutoring, interpreting, real-time captioning, and academic advising" (p. 270).

For Stinson et al., the use of real-time captioning provides the following benefits:

First, for some real-time captioning systems, the display remains on the screen for enough time to allow students to check back and fill in information they might have missed from either the interpreter or teacher. Second, a hard copy of the complete lecture transcript may be available after class when the captions are stored in a computer's memory. Third, exact technical information and specific vocabulary are produced by the captionist (as cited in Lang, 2002, p. 272).

When comparing the level of comprehension observed among groups of deaf students who used a sign language interpreter service with students who had real-time captioning, Alsalamah (2020) found that the comprehension of courses with a real-time captioning service was higher than that of those with

a sign language interpreter (p. 116).

On the other hand, it is key to remember that the automatic generation of text in subtitles can lead to errors or inaccuracies and create confusion. Finally, it is advisable that when the teacher speaks, they do so with direct language, avoiding the use of metaphors or grammatical tenses that could be complicated for this sector of students. It is also important to ensure that when using presentations, the size and font of the text in the captioning are appropriate for easy reading.

iv. Tutoring. Another important factor is the participation of tutors who accompany deaf students in their learning process. Their support is not limited to academic content but also includes other activities. For Lang et al. (2004), tutors represent “a common support service designed to enhance learning for deaf and hard-of-hearing students enrolled in postsecondary programs” (p. 189).

Tutoring can come from the teachers themselves by giving individualized attention in the classroom, from a peer tutor or from a professional one (Lang et al., 2004, p. 189). According to a survey, deaf students prefer professional tutors as they consider them more capable than peer tutors (Lang et al., 2004, p. 191).

v. Bilingual Education Programs. In addition to the above points, the use of bilingual programs is another option. These consist of having groups of deaf students within regular schools, that is, deaf students receive instruction through sign language within inclusive schools, which apparently improves their learning (Komesaroff, 2007, p. 390). Some claim that bilingual programs “produce superior linguistic, academic, and social growth in deaf children” (Marschark & Hauser, 2008, p. 14). As Rincón Infante (2022) states: “Thinking about implementing a bilingual bicultural model in higher education for the deaf implies visions from the deaf and from the hearing, and transcends the entire educational system and its restructuring of conditions and institutional life” (p. 5).

Alquati Bisol et al. (2010) assert that:

The success achieved by the bilingual approach in the development of linguistic and communication skills, through the spontaneous acquisition of language and the construction of identity as a deaf person does not seem to be repeated when it comes to learning writing. (p. 5)

While bilingual programs in inclusive schools are an excellent option, not all institutions have the human and material resources to offer them.

To conclude this first stage, the strategies described so far are based on the analysis of the 34 selected texts. The participation of interpreters, note-taking, subtitling, tutoring and bilingual teaching are the most frequently recurring themes according to the objective set in this first part of the research. However, the studies also mention some other strategies less frequently, such as the training of deaf professors to teach at the higher education level, support for deaf applicants in their registration and enrolment process at university, the provision of remedial courses, and the use of technologies and visual

aids during the presentation of subjects, among others.

3.2 SECOND PHASE: IN-DEPTH INTERVIEWS CONDUCTED WITH A DEAF STUDENT

This second phase was a series of interviews with Diego, a 31-year-old deaf young man studying for a degree in physical culture at the Benemérita Universidad Autónoma de Puebla. For the purposes of this stage, this study adopted the research approach of the *life story*. This approach allowed for exploring Diego's experiences, vicissitudes and expectations in his educational process in depth.

3.2.1 Interviews

The interviewers asked Diego to describe his significant experiences in his formative journey. They asked open and general questions, only keeping clear the objective of this part of the research. The interviews took place in several sessions without the use of an interpreter, only with the support of note-taking. To ensure effective communication, the interviewee reviewed the notes at the end of each session.

3.2.2 Objective

To obtain first-hand knowledge of Diego's life experiences in his educational process.

3.2.3 The educational institution

Diego is a student at the Benemérita Universidad Autónoma de Puebla, a public university in Mexico.

3.2.4 Diego: first school experiences

In order to better understand the problems that Diego now faces as a deaf student at the higher education level, it is necessary to be aware of his experience in the educational system, including the difficulties and challenges he had to face in the past.

Diego was born in Puebla in the municipality of Chignahuapan, Mexico. When he was three years old, he lost his hearing due to meningitis, but without having fully consolidated his language skills, so he is considered to be *prelingually deaf*¹.

Although deaf children can begin to acquire sign language from an early age, in Mexico it is not common for them to start learning it before they enter the educational system, especially if they come from a family that does not have experience with hearing impairment. This was the case for Diego, so he learned Mexican Sign Language (MSL) until he entered the educational system.

¹ A *prelingually deaf* person is an individual who lost their hearing before consolidating their spoken language skills.

He studied his basic education in two MACs, the first one in the city of Guadalajara, from the age of 4 to 12, and the second one in the city of Puebla, from the age of 12 to 15, where he finished his basic education. In these schools he had no integration problems as his classrooms included only deaf students.

Although the 3rd article of the Mexican Constitution states that “Everyone has the right to education,” admission to higher education for a student with a disability who has studied in a Special Education School is complicated, given that no documents are provided to support a student’s high school education, impeding the opportunity to be a university candidate. Diego mentions the following:

The education is too basic, they teach as special education in general, without thinking about the characteristics of certain disabilities (such as hearing impairment). In my secondary school they gave us the books for our level and the teacher did not use them, they did not teach us well. Also, some teachers are not well-trained in MLS, and they force the children to be *oralized*².

At the age of 13, at his parents’ request, Diego agreed to get a cochlear implant (CI), but due to the characteristics of his deafness, his age and the overwhelming intensity of the implant’s stimuli, he was unable to adapt to the device. He says:

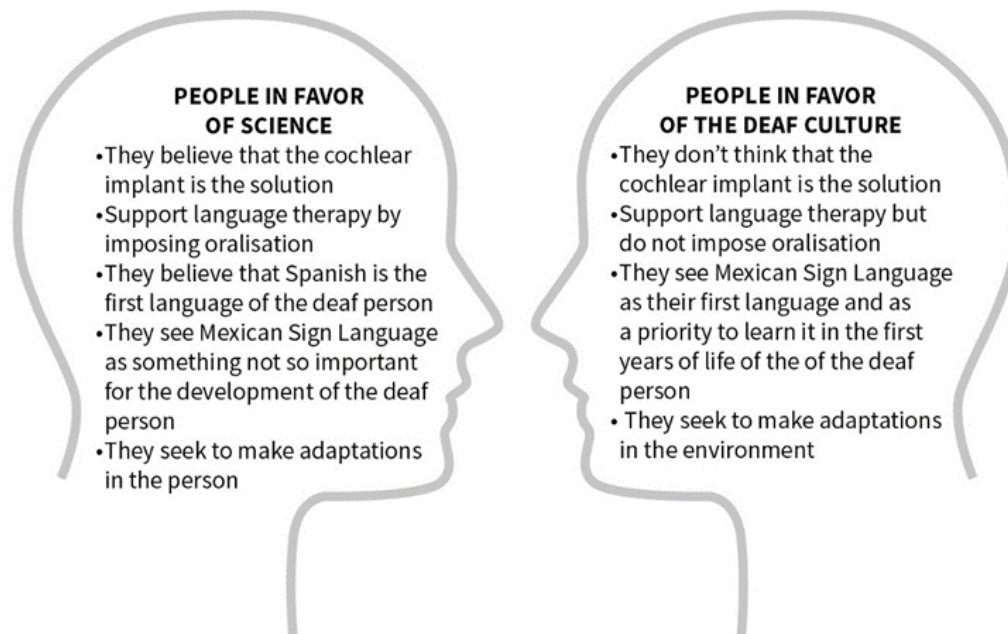
It is very difficult to understand what others say. There are too many sounds, I can concentrate with a person I live with a lot, but with new people I don’t understand what they say... I got the implant because of my mother’s request, but it’s not something I wanted, the implant isn’t everything...

It is recommended that implants are placed early so that the brain adapts and language develops in a similar way to that of a hearing child. Marschark and Hauser (2008) state that “It would appear that expectations of faster and more age-appropriate language acquisition are increasingly appropriate for many deaf children who receive a CI at a young age” (p. 31).

In his early school years, Diego learned MSL, like his mother. This language was his main form of communication until the age of 13. After the implant, both parents decided not to use it anymore in order to encourage Diego to use the spoken word, as they considered him to be oral deaf. This caused family problems in his adolescence, so he decided to move away from home at the age of 19, although he did not break the relationship with his nuclear family, who continued to support him. This is a cultural conflict that deaf people suffer when the family does not adopt deaf culture. The following diagram (Figure 1) shows an interpretation based on Diego’s comments on how he perceives the acceptance of deaf culture in society.

² Deaf people who have learned to use speech to communicate are referred to as *oralized*.

Figure 1. Diego's Interpretation of How He Perceives the Acceptance of Deaf Culture.



Source: Own Elaboration

Deaf culture promotes the respect and use of MSL, but in the case of Diego³, not all of his family embraced MSL. Resistance to learning and using MSL from a deaf person's family is common, which is detrimental to deaf children because it limits their use of language, making it difficult for them to develop their language skills.

People who are in favor of deaf culture promote the development of sign language as a first language, from the first years of life in the same way that hearing children learn oral language. They see deaf people as a community with their own language, in a similar way to indigenous people. On the other hand, people with a medical or pro-scientific approach support medical advances to introduce the deaf person into a regular environment and rely on the implant as a solution to their situation. They consider deafness a disease or dysfunctionality.

3.2.5 The beginning of diego's work experience and his entry into upper secondary education

When Diego finished his secondary school studies at the age of 15, he entered two private educational centers, one to study computers and the use of the Internet and the other to train in gastronomy for a year and a half. The latter was very helpful for him in getting a job, as he entered the labor field in different hotels and restaurants as a kitchen assistant in the cities of Cancun and Puebla, where he suffered various instances of discrimination. He also continued with his voluntary work to promote deaf culture in the city of Tuxtla Gutiérrez as secretary of the National Union of the Deaf of Mexico.

³ When a deaf person is born into a family without a deaf background, they are said to not be a deaf person for generations.

At the age of 25, Diego decided to enroll in high school and opted for the open mode in order to continue his job as a kitchen assistant as well as a teacher of MSL at the Commission for Deaf Youth of the State of Puebla (CDYSP).

After finishing high school in 2018, he decided to apply to university in the city of Puebla. The first barrier he had to overcome was the BUAP entrance exam. This institution provides two types of support for people with disabilities: the time is unlimited, and they can receive assistance from an external person. This is how he took his entrance exam: by hiring an interpreter with the help of CDYSP. He points out that he did not have high hopes of admission.

At first, I didn't think I would get into university, but I wanted to try to see if I would get in or not. But then, when the results came out, I thought I wouldn't get in, but it was the other way around and I got in. So, I took advantage of it to have future opportunities.

Diego had two options in mind: a degree in gastronomy or a degree in physical culture, eventually selecting the latter.

3.2.6 His entry to the university

When he successfully entered the university in 2018, at the age of 27, Diego said he was very excited to be able to continue his studies. He had the idea of opening doors at the university for deaf people and spreading deaf culture.

In his first months, as he was the only deaf student in the faculty, the teachers did not know how to adapt their teaching practice to include him, so he requested an interpreter, but the faculty did not grant his request as he was the first deaf student in its history. Shortly afterward, the faculty finally provided an interpreter for a month, but the experience was not effective because the interpreter was not fluent in MSL and did not know the subjects of the degree in depth, which prevented effective communication. Thus, Diego decided to take action to train his professors and classmates by providing free MSL courses, but his efforts were in vain as only five classmates and no professors attended, and class participation was very irregular.

In terms of interaction with his peers, the attitudes they demonstrated toward his communication difficulties were very contrasting. While some of them showed interest in welcoming him, and even trained in the workshops he offered, others ignored him and were not interested in involving him in the tasks they were undertaking. Diego mentions that while working in a team, the other students ignored his opinion. When he asked his colleagues how they would work together, they did not take the time to integrate him, and sometimes they altered or ignored his suggestions. All these attitudes made him very anxious and insecure.

However, regarding the professors, although some have been empathetic to understanding the

problems, others have not made changes in their teaching practice. Diego comments that some teachers use slides that contain too much text and not enough images; visual aids are a great help in understanding the subject. In this respect, Diego has tried to explain to teachers that slides with too much text and no visual aids are too complex for him, but it is hard for teachers to make adaptations to the material they use in class. In response to this, Diego comments:

I feel frustrated because I don't understand what they tell me, I can't grasp all the content of the class... I have spoken to my teachers who seem empathetic, but only some have made adaptations to their teaching...

As this paper has already pointed out, deaf students do not always achieve the same level of reading comprehension as their hearing peers, as Spanish is not their mother tongue. Teachers often do not know this and assume that providing written material is sufficient adaptation to the needs of the deaf students.

In his second year at the university, professors from another faculty contacted him to organize a training course in MSL, as this faculty now has the largest number of deaf students in the whole university: a population of four students. They had also contacted the CDYSP to provide awareness-raising talks for teachers. A course was offered to the faculty and the general public. The effort was not as successful as expected, and only five teachers attended, with only three still participating at the end of the course. However, the participation of students and the general public was enthusiastic. The special course for teachers was not offered again, but a second course for the general public has been continued.

Diego experienced the same problems of acceptance and understanding by the community in virtual classrooms as in the face-to-face classes. In the first year of isolation and implementation of distance education, it was complicated because the platform the university had selected did not have captions or was in English. In addition, some teachers refused to record their class sessions, making it very complicated to be in virtual classrooms without an interpreter. In the second year, the platform offered subtitles in Spanish, which greatly improved their experience, but even so, some of the teachers did not record the session. Having Spanish subtitles allowed Diego to understand the classes better. That is why he now prefers this modality, in addition to the fact that the obligatory use of a mouth cover, due to health regulations in face-to-face education, limits the possibility of him being able to read lips.

Diego is currently conducting research in a MAC school, with children aged 8 to 15. He is looking to create a methodology to develop the psychomotor skills of deaf children, as well as collaborating in inclusion projects at a higher level.

4 CONCLUSIONS

Clearly, universities have a long way to go to provide the necessary conditions for truly inclusive education. One of the under-supported groups includes deaf students. Several angles of the problem

involve the communicative, cognitive and social challenges. Educators should also test, adopt and improve the strategies developed in various educational institutions discussed here with the intention of paving the way and improving the learning experience for this underserved sector of students.

The lack of support shows the level of “invisibility” that this student sector suffers. This research has allowed for understanding that the magnitude of the problem lies not in the size of the deaf or hard-of-hearing population, nor in the hearing impairment itself, but in **the painful lack of knowledge, understanding, and awareness of the hearing community at large**. The level of frustration Diego revealed in his attempts to raise awareness in the academic community to which he belongs is explained by the poor response from some of his hearing peers and the almost non-existent involvement of university faculty and administrators.

Finally, the two phases of the research confirm the lack of understanding of the reality of deaf students in higher education around the world. This is the motivation of this paper and the authors hope to contribute to this task.

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