ACCESSIBILITY FOR THE DEAF IN AIRPORTS: A CASE STUDY THROUGH THE PRISM OF AN ERGONOMIC APPROACH

Monica Holdorf Lopez [1]*

Lizandra Garcia Lupi Vergara [2]

Abstract

Communication is the biggest accessibility barrier faced by deaf people who use sign language in all sectors and services in society. The airport sector is no different. Although accessibility laws ensure that sign language services are available, this is still not a reality. This research presents an excerpt from the author's master's dissertation and aims to present the analysis and solutions proposed for accessibility problems for deaf people, mainly in the airport context and for receptionists at the information desk of an airport located in southern Brazil. Two methodological approaches were used: a methodology based on Ergonomic Work Analysis combined with a descriptive theoretical model for analyzing customer service situations; and a survey. It was found that, although most Infraero employees had taken a Libras course, the training was quick and basic and was not enough for the attendant to communicate with deaf people, just as the demand for deaf people was not high enough for them to practice the language. At airlines, the demand is higher, but there is no training, and when there is, it is superficial. The main problems at the airport occur in unforeseen situations (flight delays and cancellations; gate changes; panels with incorrect information or no accessibility; lost luggage; route changes). In the end, recommendations were made for improvements, both for the service provided by the airport administrator and for the airport environment.

Keywords: Accessibility. Ergonomics. Deaf people. POUNDS. Airport.

1. INTRODUCTION

According to data from the World Health Organization, collected in 2015, there are approximately 360 million people in the world considered deaf (WHO, 2015). In Brazil, this number reaches 9,722,163 people, according to the Brazilian Institute of Geography and Statistics (IBGE) in 2010. However, little is said and thought about their needs, barriers and differences. Laborit (1994, p. 90), a deaf French actress, reports that "deafness is the only *handicap* that is not seen. We see people in wheelchairs, we see that someone is blind or in a wheelchair, but we don't see deafness."

The history of sign languages and the education of the deaf demonstrates how difficult it was, and still is, in some aspects, the understanding and acceptance of the hearing society as

---

[1] Universidade Federal de Santa Catarina. * mnikalopez@gmail.com.
[2] Universidade Federal de Santa Catarina.

to the importance of sign language for the deaf community. Since Ancient Greece (360 B.C.-355 B.C.), thinkers such as Aristotle believed that because they did not develop oral language, deaf people were naturally incapable of reasoning and that intelligence could only be developed and manifested in this way, consequently, many deaf people were marginalized and even sentenced to death for not being "useful" to the Polis (Carvalho, 2013). The conception that the deaf need to speak to be normal and to develop thought lasted through the Middle Ages, and was established in the nineteenth century with the dominance of the oralist model of teaching. This model prohibited sign language and considered oral communication as the only way for the deaf to achieve a position in society (Pereira et al, 2011).

On the other hand, the associations and a good part of the deaf community continued to fight and use sign languages in a veiled way. In Brazil, the Deaf Associations promoted commemorative parties and sports competitions in which the deaf used the signs. In schools, too, they kept signaling – hiding the signs under their clothes. These actions cooperated so that sign language was perpetuated and strengthened, as well as its history and the struggle for its rights (Gesser, 2009; Monteiro, 2006). Sign language is the way in which deaf people express themselves and understand the world, it is not a universal language, each country (or even region) has its own - they are living languages that are constantly changing (Pereira et al., 2011; Gesser, 2009). In Brazil, the official sign language is Libras - Brazilian Sign Language. Libras is a legitimate and natural linguistic system, with a gesture-visual modality and a grammatical structure independent of the Portuguese language spoken in Brazil; It enables the deaf to interact socially and intellectually and allows access to scientific knowledge, information and interpersonal integration. Libras has been recognized since 2002 as the second official language of the country (Azeredo, 2006).

As a result of the constant struggle regarding the rights of the deaf person, since 2005 the employees of public service concessionaires and federal public administration bodies must be trained to assist the deaf person, including through Libras - Decree of Law No. 5.626 Art.25 of December 22, 2005 (Brasil, 2005). Likewise, these bodies must allow access to information technologies that will assist in communication within these services. This decision led companies to make adjustments and implement training programs for the care of deaf people, especially basic LIBRAS courses to train their employees. However, there is a large gap between what the Law demands and what is the reality of companies. One of the services in which the deaf report having problems in relation to accessibility are the airport services. There are frequent complaints from this population about the lack of service in Libras and the communication barriers imposed by the lack of adequate technology. This is because in most

airports the announcements of boarding, disembarking, gate change, call for flights, landing and takeoff warning of planes are made audibly, or are not informed on the flight panels. Likewise, service in Libras is almost non-existent, both by airport administrators and airlines. These situations lead passengers to miss their flights (to enter or even take off or disembark on the wrong flights), to not being able to solve a situation that would be simple for a listener – culminating in dependence on other people (Lopez, 2016; Estender and Quadros, 2014). Situations how these Were Highlighted in first Study by the researcher, who raised a list of barriers experienced by the deaf in airports, and what should be complied with by Infraero and the airlines. After this study, the researcher felt the need to analyze the situation holistically, from the point of view of all those who participate in the service: the organizations involved, the employees and the users - in order to understand all the mechanisms that lead this service not to achieve its objectives regarding accessibility to the deaf and what measures could be adopted. Within this context, two research questions were raised: what are the gaps between the accessibility laws aimed at the deaf public, which contemplate their linguistic and cultural differences in the airport context, and the reality experienced by companies? What solutions can actually meet the accessibility of the deaf in this context? To answer these questions, the author developed a research in her master's thesis. This article brings an excerpt from this study, and aims to present the analysis and solutions raised for the problems of accessibility for deaf people, especially in the context of airports and receptionists at the information desk.

2. METHODOLOGY

When seeking answers to a problem that involves a specific social group, in which it is necessary to gather information and explore its causes in more depth, we opted for exploratory research with a qualitative approach applied to a case study in an airport located in the south of Brazil. Two methodological approaches were chosen: (1) Analysis based on the Ergonomic Analysis of Work (AET) combined with the descriptive theoretical model presented by Ferreira (2000) for the analysis of public service situations; and (2) Survey.

2.1. Study delimitation

The case study was carried out between 2015 and 2016 in a Brazilian airport managed by Infraero and located in the south of Brazil. The services to the public at the airport were carried out in two ways: through the Airlines (private companies) and by Infraero (mixed economy company). A priori, the intention of this research was to apply the AET aimed at

serving the public with both institutions. However, the airlines did not allow, or did not return, the various attempts to contact the application of the methodology. Most of them allowed the application of a questionnaire with the attendants of the check-in counters.

In order for the study to be carried out in a broader way at the airport, it was decided to use two methodological approaches: one for Infraero, with the analysis through the AET reference model (study that will be exposed in this article); and the other, such as the survey, carried out with the Airlines and in the airport context - the results of this study can be found in Holdorf and Vergara (2020) and in Lopez (2016).

2.2. Descriptive theoretical model of the AET for Public Service Situations

The model allows identifying the dynamics of existing problems in public service services, as well as improving their quality by understanding the logics of all those involved (institution, employees and users), obtaining a broad view of the service context, taking into account the efficiency/effectiveness of the service, the well-being of workers, and user satisfaction. It is based on the classical methodology of ELA (Wisner, 1987; Guérin et al. 2001), which was later adapted by Ferreira (2000) for situations of public service, where the author proposed the participation of a new actor – the user. According to Igreja (2006), in the original model of Guérin et al. (2001), the figure of the user appears implicitly, while in Ferreira's version (Figure 1), he takes a prominent place, calling the researcher's attention to the possible influences of this actor in the dynamics of care situations.
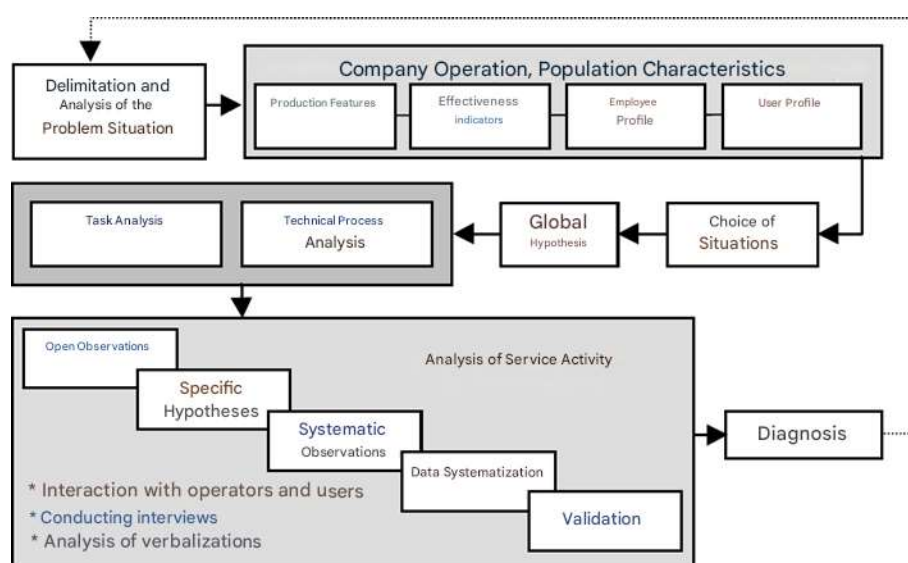

Figure 1 - AET services: stages and main procedures (Ferreira, 2000)

The model presented in Figure 1 serves as a guide for the researcher, not imposing rigid steps and procedures. This characteristic "allows a continuous coming and going between the work activity and the set of its determinants" (Guérin et al., 2001 p.82), enabling ergonomics to "apprehend, analyze and diagnose the dynamics of work, the problems and difficulties faced by the subjects and propose necessary transformations" (FERREIRA, 2000, p.7). The ELA is structured in five main moments:

(1) analysis of the demand, which aims to delimit the problem-situation to be analyzed; (2) analysis of the company's functioning and characterization of the population, which aims to identify the structural factors (organizational and human) serving as a framework for the problem-situation; (3) analysis of technical processes and tasks; (4) analysis of the care activity, aiming to describe the problem-situation, situating and explaining the causes of the emergence of critical indicators. At the end of the model, it will be possible to make recommendations, aiming to ensure the well-being of the subjects involved in the situations, as well as to improvement of the quality of the service.

3. FINDINGS

3.1. Initial Demand, Preliminary Investigation and Choice of Problem Situation

The initial demand arose from the complaints of the deaf about the lack of service in Libras and communication problems generated when some situation deviates from normal conditions (such as flight delay, gate change, lost luggage). Likewise, the researcher's previous study pointed out the need for a deeper investigation of the causes of these problems and possible solutions, also taking into account the point of view of the companies involved and the employees.

To understand the problem situation, the first contacts were made with the coordinator responsible for public service at the airport (coordinator of the social communication sector) and with the employees who perform this service at the information desk. An open interview was held with the coordinator, and an informal conversation was held with the employees. It was confirmed that the administrator's greatest contact with the public is carried out by the employees of the information desk, as well as the main communication difficulties were experienced by them. Therefore, the analysis was carried out from this workstation.

After the first contacts and the meeting with the coordinator, the first free observations were applied. The application of this tool allowed the construction of a relationship of trust between the researcher and the employees, allowing the information collected to be closer to

the reality experienced by the workers. By obtaining various information from the first contacts with the coordinator and the employees, as well as through observations, the scripts for the semi-structured interviews and the global understanding of the problem were elaborated.

3.2. Operation of the company and Characteristics of the Population

Infraero is a public economy company, endowed with legal personality under private law, linked to the Ministry of Defense. The sector in which the study was carried out is directly subordinated to the airport superintendent and the superintendence of marketing and social communication in Brasilia. The sector's staff was composed of: Coordinator of Institutional Communication, Press and Ombudsman; by an Airport Services Professional responsible for the ombudsman's office; and six employees of the information desk. The coordinator of the sector was hired through a public tender (Coordinator of Institutional Communication, Press and Ombudsman) and has been working in the position for 15 years. The employees of the counter are hired by an outsourced company, however, they report directly to the sector manager and it is he who decides on their hiring.

The Information desk is composed of five bilingual receptionists and one bilingual supervisor, all male with an average age of 36 years. The length of time working in the company is varied, the employee with the longest time is the supervisor who has been in the company for 7 years (3 as a receptionist and 4 as a supervisor) and the employee with the shortest time has been with the company for 8 months.

3.2.1. Company Policies and Operation Regarding Accessibility

Infraero's first commitment regarding accessibility was the Technical Cooperation Agreement, signed in partnership with the Special Secretariat for Human Rights in 2004. Its main purpose was to undertake actions related to the implementation of accessibility and priority and specialized care for people with disabilities or reduced mobility, as well as to support the holding of forums, congresses, courses, technical inspections, among others. In the same year, Infraero's Accessibility Program was implemented, which provides for the improvement of airport infrastructure and the training and awareness of its employees. Subsequently, in 2007, the Permanent Commissions for Accessibility Management in the Regional Offices were created, with the objective of proposing, implementing, monitoring and managing accessibility actions within the scope of the Regional Superintendencies and subordinate airports. These committees are made up of technicians from all sectors of the company, such as: engineering, operations, social communication, human resources,

ombudsman, among others. The social communication sector played an important role in this commission, its coordinator was its president for nine years (2004-2013 and from 2015). As for accessibility for the deaf public, Infraero sought to comply with federal legislation that provides for the installation of a telephone for the deaf and the training of its employees in Libras (Brasil, 2005). Figure 2 describes the adjustments that have been made over the years.

2005	2006 and 2008	2010	2010 to 2012	From 2012
•Telephone for the deaf (now obsolete)	•IATEL Libras Curro (fast face-to-face)	•IATEL Libras Course (fast face-to-face)	•Libras course (fast face-to-face)	•Libras Course (40h/ online)

IATEL: Language Therapy Hearing Institute

Figure 2 - Adjustments made by the airport administrator for accessibility to the deaf

3.3. Task Analysis and Technical Process

The receptionists at the information desk play the role of mediators between Infraero and users. The hiring of employees is done by the contractor, but the interviewees must be previously approved by the sector coordinator. At first, the counter should have eight employees: a bilingual supervisor, who would work during business hours (from 8 am to 5:48 pm), five bilingual receptionists, who would work in 4 shifts (4x1 shifts - every day - at the times: 00:00 am to 06:00 am; 06:00 am to 12:00 pm; 12:00 pm to 6:00 pm; and 6:00 pm to 12:00 pm), and two revelers, but as the company was going through changes and budget cuts, At the time of the survey, there were only six.

As for accessibility, receptionists have a significant role, as they are the first contact that the user encounters within the airport, so it is prescribed that they must "accompany and guide, when necessary, People with Special Needs on the Airport premises", as well as serve them by providing all the necessary information and equipment (as long as they fit within their other prescribed tasks). The employment contract also states that, in addition to fluency in a foreign language, it is desirable that they have fluency in Libras (basic level course, with at least 40 hours/class), duly proven by a certificate or conversation test. When gathering information through documentary research, a letter from the contractor was found that provided clarification about a request from Infraero regarding the hiring of employees fluent in Libras, as the company

was not able to find people with such qualifications. In place of this condition, they offered to provide a training course for the hired employees.

3.3.1. Technical Resources

The Information desk has two workstations each equipped with a computer. On the computer, employees have access to the flight information system, *websites* related to the concessionaires of services offered at the airport and also public services. The *internet* is restricted only to these services and some other magazines subscribed to by the company. They also communicate via radio with other sectors of the airport (mainly to ask for a passenger or employee to be called by the central sound system), as well as there is a telephone in which they also provide information services to users and communicate with the other sectors of the company. They do not have any accessible accessibility features for the deaf.

3.4. Analysis of the Activity and Context of Accessibility

3.4.1. Sector Coordinator's View

According to the coordinator, the solution imposed by law for accessibility to the deaf in public service places in Libras is an idealization that - within this specific context - is inefficient. The coordinator raised three factors to justify this statement: lack of infrastructure for teaching Libras, cost-benefit of Libras training and factors related to learning a new language, and the company's economic situation. In Chart 1 it is possible to observe the problems listed by him and the solutions he believes are viable.

Chart 1 - Problems and solutions listed by the sector coordinator

PROBLEMS	
Infrastructure and Resources	The coordinator found it difficult to hire a company to offer the Libras course, especially related to the budget request. There are few institutions that offer these courses in person and that direct the content to each type of activity. The company faces financial problems and has made budget cuts, which is a barrier to the implementation of improvements in the area of accessibility.
Training X Demand	Learning a new language requires dedication and continuous practice. What happens is that the little that is learned in the 40-hour courses is not put into practice, because the demand of deaf users is small, and over time the knowledge ends up being forgotten. It was thought that one of the solutions could be continuous training, however the receptionists are not hired and there is the possibility of the investment be lost, as the position is low-paying and employees are looking for a better professional positioning.
SOLUTIONS	

Technologies	Use of machine translation technologies. The coordinator even suggested to his superiors the installation of keyboards and monitors also aimed at users so that the deaf could communicate with the employees through writing, but the request was not granted.

3.4.2. Receptionists' View

In order to know the receptionists' view of the problems of accessibility to the deaf and what these problems were, three technical procedures were carried out for data collection: free observation, systematic observation, and semi-structured interviews.

The free observations and the interview with the receptionists took place in the months of August (one week) and September (one week). In December (two weeks) the systematic observations were made. The observations were made in all work shifts. During such procedures, no deaf person accessed the information service, however, it can be observed in the week of the September 7th holiday some groups of deaf people at the airport checking in.

The interview with the receptionists aimed to find out if: they received training to assist a deaf person, how this training was and if they used the knowledge of the training to provide care; and which suggestions they believe to be more effective to provide accessible care to a deaf person.

The results of the interviews showed that in order to assist the deaf, most employees received some type of training in Libras, with the exception of the youngest in the company. Four receptionists took the face-to-face course (which took place between 2010 and 2012), and one took the online course. Both the online and face-to-face courses bring content related to the basics of Libras (learning how to greet, understanding a question about a place and knowing how to answer it). In general, the receptionists said that, because they did not receive so many deaf people, they did not put the knowledge into practice and over time forgot the content (Figure 3).

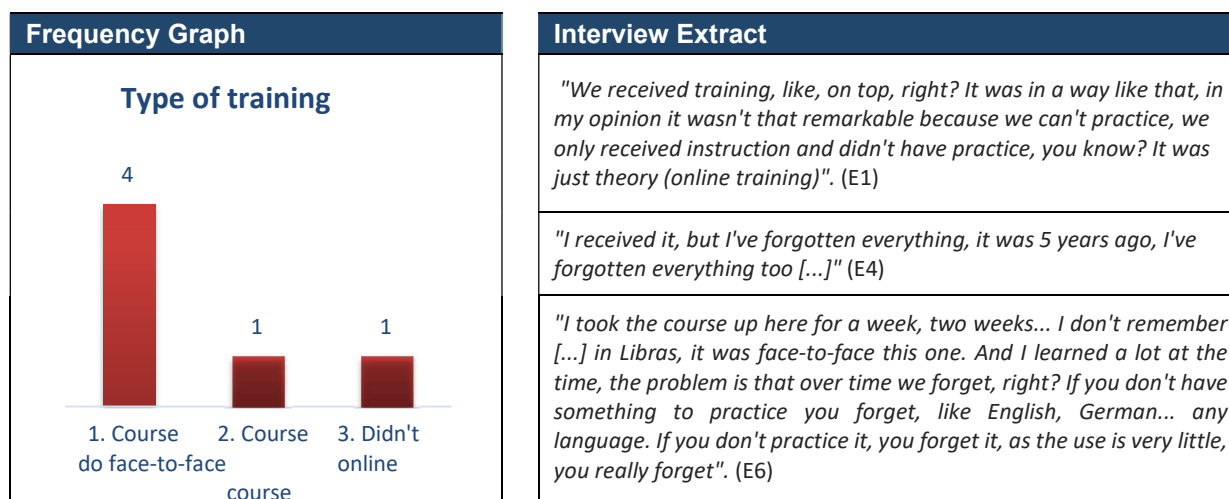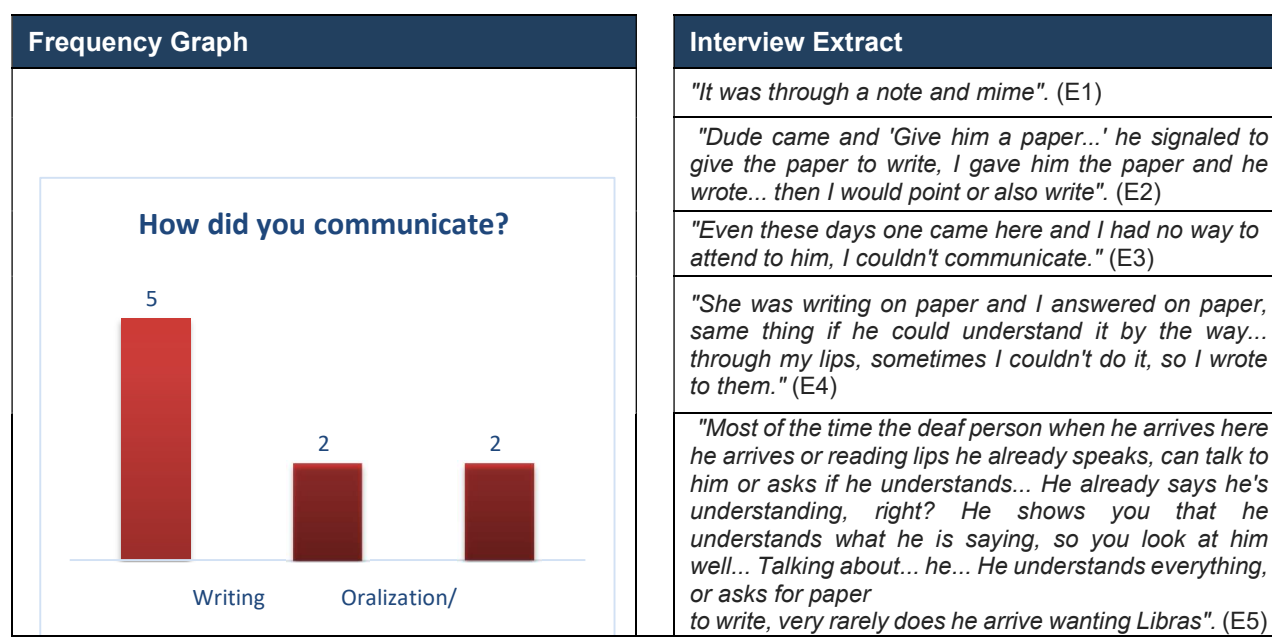| Frequency Graph	Interview Extract
Type of training (bar chart: 1. Course do face-to-face = 4; 2. Course course = 1; 3. Didn't online = 1)	*"We received training, like, on top, right? It was in a way like that, in my opinion it wasn't that remarkable because we can't practice, we only received instruction and didn't have practice, you know? It was just theory (online training)".* (E1)
	"I received it, but I've forgotten everything, it was 5 years ago, I've forgotten everything too [...]" (E4)
	"I took the course up here for a week, two weeks... I don't remember [...] in Libras, it was face-to-face this one. And I learned a lot at the time, the problem is that over time we forget, right? If you don't have something to practice you forget, like English, German... any language. If you don't practice it, you forget it, as the use is very little, you really forget". (E6)

Figure 3 - Receptionist interview: type of training received

When asked if they thought knowing Libras was important for their activity, five of them agreed that it is important and one said that it should not be. Most of the interviewees demonstrated that they understand the importance of Libras for effective communication with deaf people: *"I consider it, because people with disabilities because whatever we are, we must also be prepared in a certain way. I think it's important."* (Lopez, 2016, p.114).

As for the communication resource used in the care of the deaf person, most of the receptionists used gestures or writing - through the exchange of roles in simple language, such as the nature of the questions (e.g.: what is the departure time of flight X? Will such a flight be delayed? Where is ANVISA? etc.). There were also cases where the employee and the deaf person were unable to communicate and the customer left without the information. These data and the receptionists' statements can be seen in Figure 4.

Frequency Graph	Interview Extract
How did you communicate? (bar chart: Writing = 5; (unlabeled) = 2; Oralization/ = 2)	*"It was through a note and mime".* (E1)
	"Dude came and 'Give him a paper...' he signaled to give the paper to write, I gave him the paper and he wrote... then I would point or also write". (E2)
	"Even these days one came here and I had no way to attend to him, I couldn't communicate." (E3)
	"She was writing on paper and I answered on paper, same thing if he could understand it by the way... through my lips, sometimes I couldn't do it, so I wrote to them." (E4)
	"Most of the time the deaf person when he arrives here he arrives or reading lips he already speaks, can talk to him or asks if he understands... He already says he's understanding, right? He shows you that he understands what he is saying, so you look at him well... Talking about... he... He understands everything, or asks for paper to write, very rarely does he arrive wanting Libras". (E5)

Gestures Lip reading	"Look, he tried to communicate, but he preferred to write... because he wanted to know about the flight, he wrote down the flight number then I gave the flight situation, Did you understand? [...] Sometimes I see people here, but they don't come to ask for information." (E6)

Figure 4 - Receptionist interview: communication resources

In Chart 2, it is possible to see the main problems and solutions reported by the receptionists at the information desk.

Chart 2 - Problems and solutions listed by the receptionists at the information desk

PROBLEMS	
Training X Demand	The training given to employees by the company is very basic, and there is no ongoing training program. The content ends up being lost over the years due to the little practical opportunity with deaf users.
SOLUTIONS	
Technologies	Most of the interviewees were confused, because they first thought of a longer and more continuous course and then thought about the problem of low demand. Within this dilemma, two of them suggested that they use translation software, or some technology that they could access at the time of service.

3.4.3. User View

To collect data from the users, an online questionnaire was applied and a small focus group was held to obtain a richer discussion on the topic. Users belong to the academic environment (Libras teachers with master's or doctoral degrees; or specialization, undergraduate or integrated technical students). The questionnaire aimed to know the degree of satisfaction and the problems faced by the deaf user regarding the service received from the purchase of the ticket to the disembarkation. 13 returns were received. Of the 13 people, five were women and eight were men. Nine were between 25 and 35 years old, while three were between 18 and 24 years old, and only one was between 36 and 60 years old. Twelve of the interviewees were born deaf, and only 1 lost his hearing at the age of 12. The focus group participants were three deaf men from birth, with ages ranging from 24 to 36 years.

The first questions of the questionnaire aimed to know how many participants have already used the Infraero information desk at SC Airport and other airports, as well as what they thought of the service. Of the 13 participants, 6 said they had already used this service at the surveyed airport (SC), in the same way that 8 of the 13 participants stated that they had used the information desk at other Brazilian airports; Only two said they had never used this service.

In general, the answers regarding the quality of the service were tied between good and regular, and between could be better and bad. In the focus group, none of the three participants used this service, most of them were unaware of its function. According to the focus group participants, in most cases, deaf people who attend airports have already received instructions from their parents or friends regarding the procedures, places and whatever is necessary to travel without needing the help of other people.

When asking which situations at the airport the deaf find most difficult, most participants (questionnaire and focus group) stated that this is when gate changes and sudden flight changes (delay, cancellation, etc.) occur. Because the information is announced audibly, or is not informed on the monitors, preventing the deaf from perceiving these changes. Another situation reported in the focus group was the loss of luggage, this and the other situations mentioned lead users to need specific information, what they should do, where they should go - sometimes this information is very difficult to be transmitted in writing (depending on the user's knowledge in Portuguese), or employees do not know how to communicate, leaving the user lost, waiting for an answer, which often doesn't even happen. Another recurring problem concerns the information transmitted inside the plane, as the instructions are passed on orally by the flight attendants - the information usually concerns safety (turbulence situations and initial instructions), food and location (which city the plane will land), as reported by one of the participants:

> *[...] I once missed a flight. I landed in a place that I thought was Brasilia, but it was another place! I waited to pick up my suitcase on the suitcase belt, but it didn't come! Strange... I asked the person in charge there, 'Where's my bag?' The person asked to see my ticket and told me: 'No, this is not Brasilia' – your destination is somewhere else'. 'I felt like a clown! (Lopez, 2016, p.125).*

The problems described in this item and the suggestions for solutions given by the deaf people were organized according to the stage of the airport service and can be seen in Chart 3. The most critical issues are highlighted in red.

Chart 3 - Problems and solutions scored by deaf people (users)

PROBLEMS				
Check in	Wait	Embarkation	Airplane	Disembarkation
• Communication problems with the attendant in unusual situations/unprepared attendants; • Lack of information in Libras about procedures (flight schedule, website information, etc.).	• **Audible warning about changes in flights or passenger calls;** • **Information on flight monitors only in Portuguese or incorrect.**	• **Audible warning about gate changes;** • Problems in communication with the deaf user can lead him to take the wrong flight.	• Sound safety information or flight status; • Difficulty in communicating with flight attendants, especially regarding food.	• **Professionals and the system unprepared to assist deaf people in extraordinary situations, such as lost luggage.**

SOLUTIONS				
Check in	Wait	Embarkation	Airplane	Disembarkation
• Libras interpreter at airline companies; • Employees must learn Libras; • Video interpretation service. • Information about flights in Libras.	• Notices on panels with simultaneous translation into Libras.	• Warnings about changing the gate on panels with simultaneous translation into Libras.	• On the screens, also display in Libras information about safety and adverse situations (turbulence, landing in another location); • Training employees to assist the deaf.	• Libras interpretation service for extraordinary problems.

3.5. Recommendations

The work developed by workers in care situations constitutes an activity of mediation between the purposes of the organization and the objectives of the users, being a source of conflicts in multiple dimensions. This mediation translates into the dynamics of the customer service, impacting: a) user satisfaction; b) in the efficiency and well-being of the attendants; c) in the effectiveness and quality of the service itself (Ferreira & Freire, 2000). The visibility of possible imbalances and incompatibilities between the logics of the actors involved in the service is perceived in the form of critical indicators (such as: user complaints/dissatisfaction, employee errors, security problems, etc.). The objective of this analysis was not only to list the problems found, but to know the mechanisms that sustain these problems, aiming to develop plausible solutions that take into account the perspective of the three actors involved in the care activity. Chart 4 shows suggestions for improvement organized through short and medium-term measures.

Table 4 - Recommendations for solutions to accessibility problems at the airport

SHORT-TERM SOLUTIONS

Information Desk

• Release of *internet* for access to automatic translator and training on how to use it efficiently. The information given by the receptionists is short sentences and of low complexity, which allows the use of automated technologies. The solution, suggested by the coordinator, of having a screen with a keyboard facing the user is interesting. The interface could give access to a *chat*, where the conversation with the attendant could be in written language, or in Libras, by automatic translator. As well, the frequently asked questions may already be translated into Libras, facilitating access for the deaf user.
• Agreement with the Association of the Deaf and institutions that are linked to the teaching of Libras for periodic visits of deaf people to practice Libras.

Airlines

• The airport administrator, together with the airlines, can hire a video translation company for extraordinary situations. Since the demand for deaf people is low, as well as the occurrence of adverse situations;
• Employee awareness, however, remains important. It could be done twice a year, aiming to guide workers on how to assist a deaf person (cultural training, basic information in Libras).
• Translation of procedural information into Libras, for example: safety information, location of the plane and emergency situations inside the plane; and information on procedures when extraordinary, such as when baggage is lost.
• Delivery of a device for the deaf that warns if there is a change in gate or in relation to the flight, as well as warnings directed to that particular person – a device developed and recommended by Estender e Quadros *(*2014).

Airport

• Installation of Flight Panels with automatic translation into Libras - they are already available at other airports managed by Infraero.

MEDIUM-TERM SOLUTIONS

Libras Courses

Measures for institutions that offer Libras courses
• Direct the content of the Libras courses to the reality of each activity, reinforcing signs related to it and prepare didactic material for continuous access to information.
• Include a module on deaf culture and issues important to the community Deaf. Information helps to combat prejudice and eliminate myths and stereotypes.

4. CONCLUSIONS

The analysis of accessibility, carried out using the AET as a reference for situations of service to the public, allowed us to know the context in which the institution is inserted, how it works on accessibility – the legal requirements – what resources are provided to the employees so that these requirements are met, how they are actually executed (real work), what strategies the employees use to achieve the objectives proposed by the institution and expected by the consumer, and, finally, how users see the service: Does it fulfill what is expected? What needs to be improved? How to do it? It was found that, although Infraero offers training to the employees of the information desk, according to the legislation, it is not effective. It was observed that the vision of the coordinator and the employees converged in relation to this situation, as both declared that due to the low demand of deaf users, the receptionists ended up forgetting the content of the training (even though they thought it was important to know Libras)

and were unable to provide accessible care to the deaf. Therefore, it was suggested for this specific context the introduction of a technology that would assist in the translation of information into Libras, as well as having already translated the most requested information. Such solutions do not take away the importance and the need to continue applying the basic Libras course and to introduce a day for guidance on deaf culture and communication with the deaf. Solutions were also pointed out for other problems in the airport context and the service of airlines from the purchase of the ticket to the disembarkation.

5. DISCLAIMER

The authors are solely responsible for the information included in this work and authorize the publication of this work in the scientific dissemination channels of ABERGO 2020. The Annals of XX ABERGO will be licensed under a Creative Commons License.

REFERENCES

Azeredo, E., 2006. "Língua de Sinais: uma conquista histórica". Brasília-DF: *Secretaria Especial de Editoração e Publicações-Senado Federal* (Os: nº 03747).

Brasil. Decreto no 5.296, de 2 de dez. de 2004. Regulamenta as Leis nos 10.048, de 8 de nov. de 2000, que dá prioridade de atendimento às pessoas que especifica, e 10.098, de 19 de dez. de 2000, que estabelece normas gerais e critérios básicos para a promoção da acessibilidade das pessoas portadoras de deficiência ou com mobilidade reduzida, e dá outras providências. *Diário Oficial da República Federativa do Brasil*, Brasília.

Estender, A.C.; Quadros, J., 2011 "Inclusão social e acessibilidade aos espaços públicos para os deficientes auditivos: estudo de caso aeroporto de Congonhas". *Revista Eletrônica de Tecnologia e Cultura*. Vol. 15, p. 59-68.

Carvalho, P.D., 2013. "A Herança do Abade de L'Épée na Viragem do século XVIII para o século XIX". *Lisboa: The Factory*.

Ferreira, M. C., 2000. "Serviço de atendimento ao púbico: o que é? como analisá-lo? esboço de uma abordagem teórico-metodológica em ergonomia". *Multitemas*.

Gesser, A., 2009. "*Libras? que língua é essa?: crenças e preconceitos em torno da língua de sinais e da realidade surda*". Parábola.

Guérin, F., Kerguelen, A., & Laville, A., 2001. "*Compreender o trabalho para transformá-lo: a prática da ergonomia*". São Paulo, Blucher.

Holdorf, L. M., & Vergara, L. G. L., 2020. "Análise do atendimento a pessoa surda: um estudo preliminar em um Aeroporto no Sul do Brasil". *Brazilian Journal of Development*, *6* (7), 42673-42684.

IBGE, 2010. Características Gerais da População, Religião e Pessoas com Deficiência. Rio de Janeiro. 8 Out. 2020 https://biblioteca.ibge.gov.br/biblioteca-catalogo?id=794&view=detalhes

Laborit, E., 1994. "*O vôo da gaivota*". São Paulo, Best Seller.

Lopez, M.H., 2016. *Análise do atendimento aos surdos no contexto aeroportuário sob a ótica da ergonomia: um estudo de caso em um aeroporto de Santa Catarina.* Dissertação de mestrado, Universidade Federal de Santa Catarina, Florianópolis.

Pereira, M.C.C., Choi, D., Vieira, M.I., Gaspar, P., Nakasato, R., 2011. "*Libras: conhecimento além dos sinais*". São Paulo, Pearson, 1ª edição.

Wisner, A., 1987. "Por dentro do trabalho: ergonomia, método e técnica". In *Por dentro do trabalho: ergonomia, método e técnica.* p. 189-189.