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Deafness and accessible learning

Strategies to make the Italian language
suitable for deaf people

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You Have to be Deaf to Understand

What is it like to "hear" a hand?
You have to be deaf to understand!
What is it like to be a small child,
In a school, in a room void of sound ~
With a teacher who talks and talks and talks;
And then when she does come around to you,
She expects you to know what she's said?
You have to be deaf to understand.

Or the teacher who thinks that to make you
smart
You must first learn how to talk with your voice;
So mumbo-jumbo with hands on your face
For hours and hours without patience or end,
Until out comes a faint resembling sound?
You have to be deaf to understand.

What is it like to be curious,
To thirst for knowledge you can call your own,
With an inner desire that's set on fire ~
And you ask a brother, sister, or friend
Who looks in answer and says, "Never mind!"?
You have to be deaf to understand.

What is it like in a corner to stand,
Though there's nothing you've done really wrong
Other than try to make use of your hands
To a silent peer to communicate
A thought that comes to your mind all at once?
You have to be deaf to understand.

What is it like to be shouted at
When one thinks that will help you to hear;
Or misunderstand the words of a friend
Who is trying to make a joke clear,
And you don't get the point because he's failed?
You have to be deaf to understand.

What is it like to be laughed in the face
When you try to repeat what is said;
Just to make sure that you've understood,
And you find that the words were misread ~
And you want to cry out, "Please help me,
friend!"?
You have to be deaf to understand.

What is it like to have to depend
Upon one who can hear to phone a friend;
Or place a call to a business firm
And be forced to share what's personal, and
Then find that your message wasn't made clear?
You have to be deaf to understand.

What is it like to be deaf and alone
In the company of those who can hear ~
And you only guess as you go along,
For no one's there with a helping hand,
As you try to keep up with words and song?
You have to be deaf to understand.

What is it like on the road of life
To meet with a stranger who opens his mouth ~
And speaks out a line at a rapid pace;
And you can't understand the look in his face
Because it is new and you're lost in the race?
You have to be deaf to understand.

What is it like to comprehend
Some nimble fingers that paint the scene,
And make you smile and feel serene
With the "spoken word" of the moving hand
That makes you part of the world at large?
You have to be deaf to understand.

What is it like to "hear" a hand?
Yes, you have to be deaf to understand!

William J. Madsen
Retired Professor of Sign Language
Gallaudet University

“Adapt don’t adopt”

Clifford Prator¹

¹ Famous quote of Prator C., in Celce-Murcia M. (1980:64)

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ABSTRACT

Italiano:

La presente ricerca mira a fornire delle linee guida per l'insegnamento della lingua italiana a sordi attraverso un apprendimento accessibile che tenga conto del deficit uditivo presente in questi soggetti. Pertanto la ricerca, nella sua prima parte, propone l'analisi e sintesi dei più recenti studi linguistici sulla sordità per offrire una chiara visione di quali siano le problematiche dovute a tale deficit. Nella seconda parte dell'elaborato si sottopongono questi dati alle più innovative tecniche di glottodidattica, la quale valorizza l'apprendimento della lingua secondo un approccio umanistico - affettivo che mette in primo piano lo studente e i suoi bisogni. Nella terza parte è

proposto un protocollo linguistico in grado di facilitare l'apprendimento della lingua italiana ai soggetti sordi, valorizzando le loro capacità e compensando con tecniche specifiche il deficit che impedisce il normale apprendimento della lingua orale.

English:

The present study aims at providing some guidelines for the teaching of the Italian language to deaf people through accessible learning strategies that take into account the hearing loss that these subjects suffer from. In the first part, the research, presents the analysis and the synthesis of the most recent linguistic studies on hearing-impaired people in order to provide an overview of the problems caused by hearing loss. In the second part of the paper, data are analysed in the light of the most innovative techniques of language teaching, which emphasizes the learning of the language according to an affective-humanistic approach focusing on the student and his needs. The third part presents a proposal for a linguistic protocol to be followed so as to make the learning of the Italian language accessible to deaf subjects, based on the exploitation of their abilities and providing specific techniques aimed at making up for the deficit which prevents the normal learning of spoken language.

General introduction

This study arises from a combination of factors, first of all my personal experience gained in recent years working with hearing-impaired children and adolescents, and helping them to fill several gaps that they presented in the Italian language, in addition to my studies on deafness, linguistics and language teaching that have allowed me to pull the strings of my knowledge and experience in order to create this work.

Nowadays education still offers no effective systems to respond at the need of specific education of deaf students. Traditionally the approach is that of comparing deaf learners with their normal-hearing peers, without looking at them as students with different learning behaviours and needs. The absence of an accurate attention to this kind of population causes negative consequences because hearing-impaired people are

often excluded from communication, preventing the access to higher levels of education and professional tasks involving linguistic competences.

Language acquisition takes place according to specific processes that involve the innate biological faculty of human mind. However, it raises the question of whether oral language produced by deaf people is the result of a linguistic competence determined by innate principles or the result of an explicit teaching concentrated in setting rules with no respect for natural learning processes.

Indeed, in many cases the linguistic input at which hearing-impaired children are exposed is simplified. The reason for this simplification is that family, friends, teachers and all the people that deal with them tend to reduce the linguistic information providing only lexical contents. This 'telegraphic' language may allow them to achieve the communicative goal but it precludes empirical evidence of an integral and normal linguistic input.

Traditional education, thought for deaf students, aims at providing rules and communicating essential information pursuing semantic-pragmatic shortcuts, instead of providing a qualitatively and quantitatively rich linguistic input that allows the activation of innate principles available to all children.

According to Chesi (2006), the main features regarding the linguistic competence of hearing-impaired individuals are the following:

- Reduced receptive and productive vocabulary;
- Production of shorter sentences than normal;
- Rigidity in using some atypical expressions;
- Inability to deal with complex sentences;
- Difficulties to give grammatical judgements;
- Omission, substitution or adjunction of articles and prepositions;
- Hesitation in the use of agreements (masculine/feminine, singular/plural);
- Omission of copulative verbs, omission or substitution of auxiliaries and modals, hesitation to deal with verbal morphology.

In addition to the difficulties hearing-impaired learners experience during the acquisition of oral language, these individuals often feel frustrated and demotivated. This involves the use of tools and educational methods aimed at understanding and resolving their difficulties.

Teachers have to take into account many factors because each deaf individual comes from different communication, education and rehabilitation paths, which in turn lead to different literacy skills.

Despite these features that indicate hearing-impaired people as a heterogeneous group, there is a common denominator, i.e. their reliance on the visual channel for accessing the world of communication; therefore, successful methodologies for deaf learners should utilize this channel.

The goal of this study is precisely to provide some guidelines for the teaching of Italian language to deaf people through accessible learning strategies that take into account the hearing loss that these subjects suffer from.

Chapter 1 provides some theoretical assumptions regarding the biological process involved in the acquisition of mother tongue, and the difference between learning a second language and a foreign language, according to the studies made by Chomsky (1993), Jackendoff (1998), and Lenneberg (1967). Moreover, it presents a brief description of the development of Creole languages that are a great support of Chomsky's theory.

Chapter 2 offers a general overview of hearing impairment from a clinical point of view, and the consequent implications that affect the normal development of oral language. The level of linguistic competence depends on the interaction of many factors namely the degree of hearing loss, choice of prosthesis device and age of intervention, family background and choice of educational method. Among the different approaches that parents can choose, the best for linguistic and cognitive reasons seems to be the Bimodal Bilingual Approach that uses the interaction of oral and sign language, in order to allow deaf children an early activation of innate principles to favour the development of linguistic skills.

Chapter 3 presents the analysis and the synthesis of the most recent linguistic studies on hearing-impaired people, in order to provide an overview of the problems caused by hearing loss. This sensorial impairment drastically reduces the quantity and quality of linguistic input affecting the oral language acquisition mainly in the

comprehension and production of functional elements, verbal morphology and complex sentences.

A comparison is also made with other kind of population (i.e. children with specific linguistic impairment and patient with agrammatism) affected by linguistic disabilities, in order to provide some common techniques of rehabilitation.

Chapter 4 offers a detailed analysis of language teaching approach in the light of the most innovative techniques which emphasize the learning of the language according to an affective-humanistic approach focusing on the student and his needs. A particular attention is given to techniques that favour the development of cognitive processes and help memorizations, also through extra-linguistic tools and playful methodology.

Chapter 5 presents a proposal for a linguistic protocol to be followed so as to make the learning of Italian language accessible to hearing-impaired students, based on the exploitation of their abilities and providing specific techniques aimed at making up for the deficit which prevents the normal learning of spoken language. This method is based on the use of tools that exploit the intact visual channel and contribute to the increase of motivation and autonomy allowing to follow the natural steps of language acquisition.

The contribution of a rich and integral linguistic input is also given by the use of sign language and reading books because of their helping in the early development of linguistic skills and cognitive process, offering an enriched linguistic input, personally and directly experienced by deaf learners.

The study concludes trying to provide some guidelines to the development of an accessible learning through the explanation of how to build specific school paths following the natural process of language acquisition, and focusing on the importance to create each didactic unit according to each deaf student's needs.

INTRODUCTION:

Theoretical assumptions

Chapter 1: Acquiring and learning languages

1.1 Mother tongue acquisition

The mother tongue is the language that we have heard since birth, it is the language we acquire because of the context we live in, without any kind of study but only thanks to exposure. In fact, if a child is exposed to two or more different languages, he/she will have more than one mother tongue.

There is a big difference between acquiring and learning a language (Krashen S.D., 1981). The acquisition is a process that occurs in an unconscious way, without explicit instruction and with no apparent effort. While learning a language is a process which needs much effort (see 1.2).

Language is what distinguishes us from animals, it is part of us, and it settles in us without a forced learning. According to Jackendoff (1998:41) “we can acquire unconscious patterns unconsciously, with little or no deliberate training”.

How can children acquire a language so rapidly and only with the mere exposure?

It is interesting to note that those who are fluent in a language also know which utterances are acceptable and which are not in that specific language. They are able to understand the restrictions of their own language and give judgments¹ of grammaticality, and this is possible even if they had never heard during childhood. In fact, the information available to the child is limited, because he/she hears a random subset of sentences without wrong utterances. The absence of negative evidence that an expression belongs to the class of grammatically incorrect sentences in their language is called “Poverty of the Stimulus”.

The linguist Noam Chomsky tried to explain these concepts in terms of Generative Grammar: Generative Grammar is a term coined by Chomsky to describe a school of thought regarding the nature of language. There are several approaches to this theory, all of them try to come up with a set of rules in order to define the role of natural languages in human life.

It seems that the human brain contains a set of rules which organize language. These rules also called principles are biologically present in each person from birth

¹ A speaker is able to recognize if an utterance belongs to his/her own language and he/she is able to give judgments about the grammaticality or ungrammaticality of this utterance. This is possible thanks to the mental grammar with which every speaker is equipped.

(biological faculty of language) in order to permit the natural acquisition of a language to everybody. Chomsky called this ability Universal Grammar (UG). Universal because, as we have seen, it is innate in every human mind, but also because these principles are shared by all the languages in the world.

The UG theory does not aim at specifically describing one language or another, or at postulating that all languages have the same grammar; it aims at identifying an innate set of rules to explain how children acquire language, and how they learn to construct grammatical sentences.

Chomsky postulated the presence of a Language Acquisition Device (LAD) which permits Children to acquire their mother tongue in a natural way. This LAD, also called mental grammar, is genetically innate and makes acquisition possible. Hence, UG is the initially state of the human mind, then, thanks to the input (just the simply exposure) of a specific language, people builds the grammar of that specific language.

Mental grammar is composed of the innate part (UG) and the learned part throughout the reworking of listened input. Chomsky (1993) postulated the model of *Principles and Parameters* to explain this mental process, in which the universal principles are a finite set common to all languages (e.g.: that a sentence must always have a subject, even if it is not overtly pronounced), while parameters are a finite set that determines variability amongst languages (e.g.: a binary parameter can be set in various ways, for instance it can determine whether or not the subject of a sentence must be overtly pronounced²). These parameters are fixed by children according to the languages they are exposed to. It is the interaction of principles and parameters setting that gives birth to all languages.

Languages are classified according to their rhythm (compared to syllables), and infants, in their first three months of life, have the sensibility to hear the difference according to this rhythm. So they are born with the range of linguistic possibilities and they are sensible to all languages. However, they hear a specific kind of language and in a short period of time they become insensible to the other types. For instance, in the first months of life, a Japanese child can distinguish the phoneme [l] from the phoneme [r] but at a certain point he/she understands that the phoneme [r] does not exist in the Japanese language and becomes insensible to that phonetic difference. This happens

² The null subject parameter is also called pro-drop parameter and regards the covert presence of the subject when it is not necessary to pronounce it. This parameter is selected for languages such as Italian and Spanish while, for instance, English and French are not pro-drop languages, since they always need a subject overtly expressed.

because there is a process of deletion of possibilities: experience permits to eliminate and not remember irrelevant contrasts for the language they are acquiring, maintaining awareness only of contrasts which are relevant, as it is shown in (Mehler *et al.*, 1988) and (Mehler *et al.*, 1998).

Evidence in support of this position comes from a research (Werker & Tees, 1984) which demonstrates that, at 6 months of age, English newborns are able to distinguish foreign language contrasts but, by 12 months of age, they do not.

Around the age of five to eight months, infants start their first productions called babbling. This period is characterized by the productions of simple syllables (a consonant and a vowel), mainly multiple syllables with the same consonant or rare combinations of consonants (consonants used in this period are few and are mostly occlusive).

Around the age of ten to twelve months, infants begin to produce their first words and their lexicon starts to increase reaching 50-100 words in about six months.

Around the age of two, children start to combine words and their vocabulary increases exponentially showing a syntactic system dominated by rules.

Around the age of ten, they have the same linguistic competence as an adult speaker.

1.2 Foreign language and second language

As shown in the previous section, language acquisition is an innate process of setting the parameters which characterize a specific language, as opposed to the universal principles which are present from birth in what Chomsky has called UG. Thus, UG is a specific biological faculty which permits the acquisition of language. However, this process is innate and is not accessible to adult learners. The acquisition of a language is possible until a specific period of human life called *critical period* (Lenneberg E. G., 1967).

The exposure to the input of a language is necessary to stimulate this innate and biological ability, but it has to take place within the critical period that is a time window from zero to twelve year old within which it carries out the process of lateralization of the brain: specialization of the two hemispheres, the left one for the management of the language while the right one for a global vision of events.

At puberty, there is a sensible period characterized by a gradual loss of ability to discriminate spontaneously the different modules of the language (morphology, phonology and syntax) up to a closure that brings an increasing use of efforts to learn a new language.

Evidence of this process comes from wild children's stories. For instance Victor, the wild boy of Aveyron, who was found in the woods near Saint-Sernin-Sur-Rance in France when he was twelve years old. The physician Jean Marc Gaspard Itard³ was interested to his situation and tried to educate him without great success. Another famous wild child was Genie, a girl confined in a small room and raised in social isolation. Her story drew attention to Susan Curtiss (Curtiss *et al.* 1974) and her education was a unique opportunity to offer evidence for the 'critical period hypothesis'. After a year of treatment, she started putting three words together occasionally. However, she didn't make the usual next step relating to the rapid acquisition of new lexicon. Her language abilities remained stuck at that stage and she appeared unable to use grammar.

Learning is different from acquiring (Krashen S. D., 1981). The acquisition, as we have seen, is an unconscious process, while learning a language is something that a person does much of the time for specific purposes.

When a language is learned after the critical period we cannot talk about mother tongue or first language (L1) acquisition, it will be a foreign language. It is the case of languages learned in a country different from that in which those languages are spoken. They are studied in a specific context, for instance at school where the input is given by a teacher, so, not in a natural way.

We learn a language for a specific purpose, because it is a subject at school, or because we have to know it for job, or even just for pleasure.

Although we desire to know a foreign language, the process of learning differs from that of acquiring, because we do not receive the linguistic input intrinsically through natural exposure, but we have to study it and make much effort to improve our skills and learn the new language.

There is also the possibility to learn a language not as our L1 but as a second language (L2). It happens when the linguistic input comes directly from the context in which we live, when we learn a language in the place where it is spoken.

³ Jean Marc Gaspard Itard (1775-1838), French physician. He is known as an educator of Deaf people, and tried his educational theories in the celebrated case of Victor of Aveyron.

There is an inverse relationship between the age of exposure to a L2 and the level of proficiency: the lower the age from which you are exposed to the language, the greater will be the level of proficiency in that language according to the theory of the critical period (Lenneberg E.G., 1967).

Evidence of this phenomenon comes from immigrants who arrive in a new country. Adults show much difficulty learning the new language while their children can acquire a good proficiency both in syntax, phonology and morphology, in a short period of time and with less effort.

1.3 Creole languages: a support of Chomsky's theory

We have talked about languages that exist in the world, however it is important to know that languages are not static but in continuous change and that there is also the possibility of the birth of new languages. Bickerton (1999) claims that there are two ways in which a new language can be born: gradually (as we have seen) or because of a catastrophe. As for the latter phenomenon, there is a subdivision because we can distinguish two types of catastrophe: the situation of the fortress and the situation of plantation.

In the first case an external group of people enters a multilingual area establishing connections with local people. An example of this phenomenon happened in XVI century when Portuguese army built trading outposts on the Indian coasts to control spice market. From the contact between Portuguese and some indigenous languages several new languages were born.

In the second case, that of plantation, an external group creates a new society moving people from many different areas, without a common language, in an isolate area. This situation happened, for instance, in XIX century with slave importation from Africa to America.

Although people were in contact, they did not share a common language and no group learned the languages of the other groups for several reasons (e.g.: absence of confidence; fear of being subjected, etc.). For this reason, they started to communicate to each other using a simplified code borrowing elements from their different mother tongues and giving rise to what we call *Pidgin*.

Pidgin is not the mother tongue of anyone, it is just a simplified code used to communicate with people who do not share the same language. However, in some

cases, Pidgin can be learned by children of the next generations becoming their mother tongue. When a pidgin becomes the L1 of a community, it is called *Creole*⁴.

How can children build a complex language based on a language drastically simplified like Pidgin?

The hypothesis is that children learn to speak a language from a context in which Pidgin is spoken, because they draw from their linguistic innate knowledge. Hence, although the impoverished input of Pidgin, they involve their LAD and reform the language with linguistic structures belonging to UG. This process called “creolization” takes place unconsciously as a further support for Chomsky’s theory.

Studies about Creole languages have supported the presence of the UG because it was demonstrated that these new languages share certain specific characteristics: syntactically, each of these languages, uses participles to form future tense, some forms of the past, and multiple negatives to deny; another similarity is that it can be sufficient to change the inflection of a sentence to create direct interrogatives, without changing the construction of the sentence.

If Creole languages represent the biological manifestation of new languages, they will permit us to understand the structure of language in the early steps of its development and also what the conditions for the origin of a language are. In this way, we will be able to formulate more specific hypotheses about what makes human species different from others.

⁴ The word “Creole” derives from the Portuguese word “criuolo” initially used to describe African slaves or European people who were born in the New World.

PART ONE:

Hearing impairment

Chapter 2: Deafness: invisible disability

2.1 Hearing impairment

The term deaf is usually referred to a person who has a partial or total inability of perceiving sounds in the speech frequencies. This hearing impairment is due to an alteration of the auditory system that can be caused by several reasons such as disease, exposure to loud noise, genetic malformation, neurological disorders, medications or physical trauma.

Deafness is also called "invisible disability" or "disability of communication", because it is not immediately obvious from the outside. We cannot see if a person suffers from hearing impairment just by looking at his/her physical appearance, but we perceive it when we try to communicate with him.

Disability is a condition that puts a person at a disadvantage compared to others, as a consequence of an impairment called deficit. Hence, the deficit is the hearing impairment while the disability is the set of problems that a deaf person runs up against interacting with society.

It is possible to classify hearing loss according to the average (in decibel) of tone thresholds. The speech reception threshold is called the Pure Tone Average (PTA). Hearing impairment is measured in decibels of hearing loss (dB HL) and, according to the International Bureau for Audiophonology (BIAP 1996), it may be ranked as below:

- Normal hearing: until 20 dB HL
- Mild hearing loss: between 21 and 40 dB HL
- Moderate hearing loss: between 41 and 55 dB HL
- Severe hearing loss: between 56 and 70 dB HL (only phonemes with high intensity are perceived)
- Profound hearing loss: between 71 and 90 dB HL (problems in phonological acquiring)
- Total hearing loss: between 91 and 120 dB HL (no sound is perceived)

There are, however, other important variables which characterize hearing impairment, such as the site of the lesion and the onset of deafness.

The onset is an important aspect to keep in mind because hearing loss can be preverbal if it affects a person before he/she has acquired language, i.e. in the first years of life (before the age of three), taking the name *congenital hearing loss*. However, hearing loss can also be postverbal, if impairment occurs between the age of three and seven, and it leads to a delay in linguistic abilities. If hearing loss occurs after the age of seven, hearing impairment does not affect language.

In order to distinguish the different types of impairment according to the sites of lesion, we have to divide the human ear in three areas:

- 1) Outer ear, including auricle, ear canal and tympanic membrane;
- 2) Middle ear, including malleus, incus and stapes;
- 3) Inner ear, including semicircular canals and cochlear.

Figure 1: diagram of the anatomy of the human ear. Image by Chittka L, Brockmann, via Wikimedia Commons.

The outer ear receives the acoustic signal and transmits it to the middle ear. Here the sound is mechanically perceived and transmitted to the inner ear. Then the sound is

codified and transmitted to the brain through neurological signals in order to be interpreted.

Depending on the location of the lesion we can distinguish different types of hearing impairment:

- Conductive hearing loss affecting the outer ear;
- Perceptive and sensorineural hearing impairment affecting the inner ear;
- Combined hearing loss affecting the outer, middle and inner ear.

In this paper, the attention is focused on the effects of sensorineural hearing loss, which can be isolated or associated with cognitive and neurological disorders. This kind of impairment does not make possible to easily comprehend the distinctive features of phonemes, and compromise the normal language acquisition.

Another important variable is represented by the choice of the hearing device. In particular, the main prostheses are two: the acoustic conventional hearing aid (it helps in the coding of low sound frequencies and in the perception of music); a cochlear implant (it helps in the coding of high sound frequencies).

While conventional hearing aids are external prostheses which do not require invasive surgery, a cochlear implant (CI) is an implanted electronic device, which surgically placed under the skin, behind the ear.

The external part of the device includes:

- one or more *microphones* which pick up sound from the environment
- a *speech processor* which selectively filters sound to prioritize audible speech, splits the sound into channels and sends the electrical sound signals through a thin cable to the transmitter,
- a *transmitter*, which is a coil held in position by a magnet placed behind the external ear, and transmits power and the processed sound signals across the skin to the internal device by electromagnetic induction.

Inside the ear we find:

- a *receiver and stimulator* secured in bone beneath the skin, which converts the signals into electric impulses and sends them through an internal cable to electrodes,
- an array of *electrodes* wound through the cochlea, which send the impulses to the nerves in the scale tympani and then directly to the brain through the auditory nerve system.

Figure 2: Cochlear implant. Image by the National Institute on Deafness and Other Communication Disorders at the National Institutes of Health, via Wikimedia Commons.

The CI does not cure hearing impairment; it is just a prosthetic substitute for hearing. The perception of the sound differs from that perceived by natural hearing. Indeed, the sound information received and processed by the brain is qualitatively and quantitatively minor. Many recent studies (Caselli et al. 2012, Connor et al. 2006; Ertmer, Young & Nathani 2007) show that the activation, in deaf children, of a CI in the second year of life may contribute in the development of linguistic skills. Despite this, the authors evidence difficulties in morphology and lexical comprehension when they request a phonological discrimination.

Furthermore, other studies (Pisoni & Cleary, 2003) evidence a limitation in short-term memory in children with a CI that negatively affects the ability to comprehend and reproduce morpho-phonological information.

Therefore, the main limitation about CI seems to affect the phonological sphere. In fact, even though newer devices and processing-strategies allow deaf people to hear better in noisy condition, enjoy music and use their device while swimming, in chaotic conditions, as for instance at the train station or in crowded public places, speech understanding often remains poor.

2.2 From deficit to disability

As we have seen in the previous chapter, in order to acquire a language, a person needs an external linguistic input. Deaf people may not have the access to this input or, in any case, hearing impairment reduces it drastically.

To comprehend the qualitative features of a sound it is sufficient to think about voice: when we hear a voice we can recognize whether it is familiar or not. In other words, we can associate it to a specific person even if he/she is not physically present. Moreover, voice changes according to feeling. Hence, for instance, we can perceive if a person is happy, sad, angry, tired or bored, but also if he/she is in a hurry, or if he/she uses an ironic, sarcastic, cynical or hesitant tone, and so on.

Even if we do not know a voice and we do not see the person we are talking to, we can easily identify whether it belongs to a man or a woman, to a child, to an old person or to a foreigner. Therefore, from the voice, we receive a massive amount of information, and a normal-hearing person has access to it through the mere exposure.

In the previous chapter, we have seen that children use prosodic cues (syllables and stresses) to improve their skills, but only the early development of these properties make the natural language acquisition possible.

The perception of sound also allows us to discriminate minimal pairs, i.e. words that are similar and that differ just for a phoneme (e.g.: pollo/bollo, cane/pane, toro/topo). This happens because languages are built associating different phonemes. A normal-hearing child hears these sounds, meaningless, which acquire meaning and transmit information when they are put together becoming a word. Then, the aggregation of words in sentences transmits all the other information.

Hearing loss is more a linguistic deficit than a sensorial one. Even though deaf children start speech therapy early, they access the linguistic input later than usual and only during therapy sessions. The input is not continuous as in the natural exposure, and this condition is the cause that does not permit the right access to the prosodic information.

A normal-hearing infant starts to be exposed to speech sounds in the womb, then, when he/she is born, he/she is exposed to them not only directly, when people communicate to him, but also, for instance, when they talk to each other near the child. Therefore, even the indirect exposure is important for acquisition.

Despite the delayed access to the input, it does not mean that a deaf child does not develop a mental grammar, because the biological faculty of language is innate in every human being (see Chapter 1).

The loss of sound perception, through which words and sentences transmit information, is not the real obstacle to the oral language. The problem consists in the lack of this information, i.e. a limited and impoverished linguistic input.

The loss of sound perception is less serious if we give the hearing-impaired child all the information transmitted by words and sentences: the child is deaf but he/she does not have to be excluded from the access to the language.

From this point of view, written language has an important role because it makes possible for a deaf individual to understand the information that sentences transmit, whether they are logical or illogical, true or false, useful or useless, and so on, without the need of mediation between input and recipient (see Chapter 5).

Although the CI allows deaf children to achieve a level of linguistic competence comparable to their peers, the device does not completely delete the disability. In fact, it does not make up for the lack of the linguistic exposure in the first months of life.

As we have seen in the previous paragraph, Caselli et al. (2012) investigated lexical and grammatical comprehension and production in a group of 17 deaf children who had received a CI in the second year of life. The results showed that the activation of the CI in that period of life favoured the increase of linguistic skills. However, they show that these children have some limitations in phonological and morphological skills, while comprehension is not completely age appropriate.

In addition to this linguistic evidence, it is important to keep in mind a more technical aspect about CI: the outcomes are different and not all of them have a relevant success.

The factors that can affect language acquisition are age of hearing loss onset and age at which deaf children receive the cochlear implants.

As we will see in the next paragraph, also the family background is a variable that affects deaf children and his/her relation with the oral language. In fact, the educational choice may drastically change according to the parents' situation, i.e. to have deaf parents or normal-hearing parents influences linguistic choice and the type of intervention.

Many studies about deaf children with a CI (Beronesi, Volterra, 1986; Rampelli, 1989) indicate that, even though they are exposed to the input, they present some common problems:

- Limited lexicon compared to their peers
- Use of very short sentences
- Problems in the use of complex structures (such as passive, relative and embedded sentences)
- Errors in verbal morphology
- Omission of the copulative verb
- Omission or substitution of auxiliary and modal verbs
- Omission or substitution of closed-class words (e.g.: determinants, pronouns, prepositions)

Moreover, in addition to the linguistic deficit, they also present cognitive difficulties:

- Poor and limited encyclopaedia
- Difficulties in orientation in time
- Difficulties to understand causal links
- Difficulties in hypothetical thinking
- Difficulties to distinguish concrete and abstract concepts

These difficulties become more and more problematic because they also affect the interpersonal and emotive sphere. They cause a difficult interaction with other individuals, sense of frustration and incapacity, thus causing feeling of uncertainty and insecurity, and in most cases bringing the individual to isolation.

Furthermore, all these features are common in children who cannot develop their mother tongue. Therefore not only children suffering from hearing impairment but also, for instance, wild children brought up like animals (e.g. Genie and Victor), (see Chapter 1).

To sum up, the linguistic development of hearing-impaired children depends on several variables/factors, such as degree of hearing loss, onset of deafness, age of diagnosis, age and kind of intervention, its success, and also their family background. Although this population is so heterogeneous, deaf people have some common linguistic difficulties. This makes possible to create some common guidelines to make the language accessible to deaf individuals, bypassing the phonological deficit.

2.3 Deaf schoolchildren education

In the follow paragraphs we will see how Italian schools deal with hearing impaired students and what are the possible educational approaches between that parents can chose for their deaf children. A particular importance will be given to the learning of sign language as linguistic code that is not affected by hearing loss and, therefore, able to develop in a natural way. Found that the oral language is necessary for people to be integrated in today's society, the best choice seems to be the Bimodal Bilingual Approach, as the most accessible and complete way of educate individuals with hearing impairment.

2.3.1 Education and integration at school

The Italian Framework Law 104/92 provides that people with disabilities of any type and degree attend mainstream school supporting them with a coordinated planning of educational, health, social, cultural, leisure and sport services, and providing schools of technical equipment and specific educational material.

In particular, as far as hearing-impaired students are concerned, the school requires the presence of a communication assistant (art.13), who assists the deaf child

and makes the school materials accessible by using different communicative systems according to the educational choice made by his/her parents.

However, the educational goals seem to take two different ways: on the one hand, teacher at school are more indulgent with deaf students than with their hearing peers by proposing a reduced program often synonymous of incompleteness and superficiality. On the other hand, the comparison with the level of their peers shows that the common school program is unsuitable for deaf students, thus becoming a source of discouragement.

There is a delicate balance between the desire to discover and the need of gratification, essential to a fruitful study. However, this equilibrium is often damaged by conflicts and misunderstanding between teacher and student. Indeed, goals and assignments sometimes seem to be indefinite and illusory, reducing the school program instead of adapting it to the student's needs and bringing the deaf individual to lose the sense of responsibility and the desire of engage.

Schools have the duty to give an accessible program to deaf students. They have to try at exploiting students' abilities and supply them specific techniques aimed at making up to the deficit which hamper normal learning. Moreover, schools have the duty to promote the inclusion and socialization between hearing-impaired and normal-hearing students giving to the latter all the information useful to interact with deaf people in order to help them to integrate into society.

Therefore, schools have the fundamental aim of creating a specialized curriculum for deaf students, in order to address it to each individual's needs.

Actually, nowadays the language education is entrusted only to rehabilitation, i.e. to speech therapy. School is not prepared to accommodate deaf students, because it does not know how to offer them a continuation to rehabilitation. Moreover, it is not able to guarantee a specialized teaching. There are very few teachers who know the difficulties related to hearing impairment and think about how to deal with it.

2.3.2 Possible educational methods for deaf children

Since the beginning of interest for deaf children's education in the 18th century, the main trend was to adopt the oral method. It focused on the development of speech abilities teaching the child how to use his/her residual hearing. The oral education is

based on an early exposure to the learning of writing and reading, with the ultimate goal to bring the child to acquire the phonetic rhythm of the oral language.

This method, exclusively oral, has some limitations. It mainly focuses on the articulatory aspect, without giving too much importance to comprehension. For instance, the lexical assessment is programmed according to the difficulty of pronouncing words instead of taking into account semantic features. Hence, the deaf student is considered only from a clinical-rehabilitation point of view.

Oralism aims at “normalizing” deaf children with the goal to bring them at speaking well without any particular attention to specific individual needs and learning rhythms.

Another educational method is bimodalism, also known as a mixed approach. It has the same goal of oralism in terms of the development of speech abilities. However, it also aims at helping to learn language combining oral and visual-gestural modality.

It uses the intact visual channel in support of the oral language. The main language is always the oral one. In fact, the gestural model maintains the syntactic structure of the spoken language. In Italian, this code is called Italiano Segnato (IS) and consists of the one-to-one association between words and signs. This method aims at teaching only the oral language, through the simultaneous use of the two codes: the verbal-acoustic one and the visual-gestural one.

In this particular educational method, there is also another type of IS which can be used, namely the ‘Italiano Segnato Esatto’ (ISE). It is used for all the discourse parts which do not have an equivalent sign. Hence, it uses artificial signs or dactylology⁵ to translate articles and prepositions.

In education, the use of signs is a support which makes it possible to help the deaf child in the early stages of acquisition, when he/she fails to use the spoken language for communication.

This method focuses on all the linguistic aspects (syntax, morphology, phonology and pragmatics) in both spoken and written contexts. However, the bimodal approach focuses on the development of receptive skills, i.e. the ISE is used to help deaf children in comprehension, while it does not pay much attention to production.

⁵ Dactylology is the manual alphabet used by hearing-impaired people. It is not a sign language. It is just a code to represent letters and numbers with manual configurations.

2.3.3 Sign language: a source of linguistic richness for deaf people

Italian Sign Language (LIS) is the language used by Italian deaf individuals to communicate with each other. As all the other sign languages in the world, LIS is not a simplified code or a mime. It is a real language with the same features as spoken languages. Hence, LIS has grammatical, syntactical, lexical, and morphological rules. It has developed naturally as all the other languages. However, it uses the visual-gestural channel to make communication accessible to deaf people.

Its structure differs from that of the oral language. In fact, its parameters consist on manual components such as handshape, orientation, movement and location. But it has also a non-manual component characterized by facial expressions, mouthing, eye gaze, and body posture. Each of these components contributes to give meaning to the sign (for LIS, Volterra 1981; for ASL, Stokoe 1960).

LIS also presents other features common to all languages. It is subjected to diachronic variation, for instance the birth, development, and sometimes the death of a sign as it happens for oral language when a term disappears from the linguistic scenario because disused and obsolete. And also to diatopic variations, which characterize differentiations across regions and communities.

Moreover, each sign language belongs to a deaf community and these people transmit not only their language but also their culture and habits, real soul of the deaf people's identity (Volterra et al., 2006). This study aims that the sign language is easier than the oral one, because it is acquired through an intact sensorial channel, the visual-gestural one.

The sign language may be accessible to the deaf newborn earlier than the oral one. According to Chomsky (see chapter 1), it allows the natural acquisition reducing the risk of a cognitive and linguistic delay.

Further research carried out by Orlansky et al. (2005) compared hearing-impaired and normal-hearing children in their first stages of language development. The study observed that production began very early in the deaf group: the first sign is produced around the age of eight months, and about ten signs are produced at the age of eleven months. At the same age, normal-hearing children produce about two words. This seems to be possible thanks to the iconicity of the sign, even if the signs produced have the same typical features of the oral baby-language.

Volterra et al. (2006) talk about Baby Sign Language. They support the thesis that, thanks to its representational form and its symbolic communicative function, knowing the sign language favours the language acquisition. Moreover, the authors suggest that the early introduction of the gestural modality could be a great solution also for kids who do not speak well also after the age of two years, not only hearing-impaired children but also children who have a linguistic delay due to other problems that affect cognitive processes (i.e. particular syndromes as for instance children with autism).

2.3.4 Bimodal Bilingual Approach

Bilingual education involves the simultaneous exposure to two languages, although in different contexts. A typical situation of bilingualism is when a child has parents with different origins and both the mother and the father want to speak with him in their respective native language. As we have seen in the first chapter, this is the perfect situation that gives the possibility to acquire two languages as mother tongues.

In fact, newborns are sensitive to the different ways people speak (e.g. different registers, the difference between polite and impolite ways of talking, etc), and learn quickly these properties.

Like adults, bilingual children often use words from one language when they are speaking in the other. This is a typical phenomenon called code-switching. Although parents could be worried thinking there may be problems and confusion in acquisition, code-switching does not mean that the child is confused about which language he/she is using. It is a natural process typical in bilingual acquisition. Over the years, it becomes a real skill for the multilingual individual of choosing, on purpose, a term of a language speaking in the other, without doing syntactic errors.

Actually, parents cannot be teachers for their child, they have just to talk with him spontaneously. Infants will learn the two different languages naturally as walking or smiling.

Most importantly, parents have to expose their child to the language in a variety of circumstances in order to enrich the language development.

A particular type of bilingualism, the Bimodal Bilingual Approach, interests deaf children's education. It regards the combination of a sign and a spoken language.

This educational method consists of using both the sign language and the spoken language as communication medium and accessing school curriculum.

However, it differs from the typical bilingualism because it consists in acquiring the sign language at first and the oral language only later. The reason of this fact is that the process that involves the acquisition of the oral language may be slower than that of the sign language.

On the one hand, the oral language is necessary, because it is the means of communication used by the majority of the population. Moreover, it is essential to enter the world of work.

On the other hand, the sign language is important for deaf people because it allows to develop a linguistic code without the need of the acoustic channel, and also it gives the opportunity for deaf people to communicate one another.

Hence, the question is: why is it necessary to choose between sign and spoken language if deaf people can have both?

Sorace (2009) evidences that many recent studies have shown that bilingualism is beneficial for children's development and their future. She aims that: “advantages are particularly evident in tasks that involve cognitive flexibility and the control of attention: bilingual children seem to be better at selectively playing attention” (Sorace, 2009:15).

Therefore, they are intuitive and ablest to focus attention ignoring irrelevant information. In addition, they often are more precocious readers, and find it easier to learn other languages.

Another important aspect is that minority languages have the right to be preserved and promoted, and bilingualism may have the power to influence positively or negatively their linguistic and cognitive development.

Bilingualism enriches a person not only from a linguistic point of view, but also from a cultural and cognitive one. And this happens also with the sign language.

Recent technology advances, as for instance the improvement of cochlear implants, coupled with oral methods rejecting any type of gestural code.

Despite this situation, there is evidence that sign language does not affect negatively the oral language development (Giezen 2011).

On the contrary, many studies demonstrated that the acquisition of a sign language improves spoken language learning. Among them, Volpato (2008) analysed

the comprehension and production of third person accusative clitic pronouns in sentences with left-dislocation, in three adult hearing impaired bilinguals Italian/LIS and in four normal-hearing Italian speakers. Results showed no significant difference between the two groups is observed, and suggested that the linguistic competence of the hearing-impaired adults is quite intact.

Bertone and Volpato (2009) compared four different groups of deaf individuals (orally-trained children with CI, native signers, non-native signers and deaf foreigner adolescents and adults). Results revealed that, in order to make up for the lack of linguistic competences (e.g. in reversible passive sentences), deaf people adopt different strategies (see chapter 3).

Although cochlear implanted children have better performance than all the other groups, their interpretations are mediated by knowledge of a word labelled by linguistic knowledge. Whereas, among the participants without a CI, the qualitatively best solutions are made by the group of adolescents who know the sign language. Their spontaneous answers are influenced not by knowledge of linguistic labels but by their already solid competence in a language, the Italian Sign Language.

In fact, the sign language provides richer linguistic and experiential knowledge which favours the lexical access to the oral language (Jiménez, Pine, Herruzo, 2009). Moreover, it facilitates the cognitive development and the access to academic contents. The more intellectual skills a deaf student will acquire, the more harmonious personality he/she will have (see 2.2).

The bimodal bilingual education for deaf children is also supported by the linguistic interdependent model which suggests that “to the extent that instruction in L_x is effective in promoting proficiency in L_x, transfer of this proficiency in L_y will occur provided there is adequate exposure to L_y and adequate motivation to learn L_y” (Cummins, 1981:29).

According to the sociolinguistic situation, this transfer may concern conceptual knowledge, metacognitive and metalinguistic strategies, pragmatic aspects of language use, or also phonological awareness.

However, bilingualism entails some linguistic and psychological issues. First of all, the majority of deaf children have normal-hearing parents who are not native signers or do not know the sign language at all. Only 5% of deaf children have deaf parents who can teach them the sign language as their mother tongue.

Although recently the deaf community has begun to promote its language, if a child is not exposed to it in a constant and spontaneous way, as it happens for normal-hearing children with the oral language, he/she does not acquire it.

Normal-hearing parents who want a bilingual education for their deaf child have not only to learn the sign language but also to create the condition for putting the child in contact with other deaf people who have the sign language as their mother tongue thus providing the right exposure to the sign language.

The Bimodal Bilingual Approach guarantees to hearing-impaired children a full cultural and linguistic acquisition because it exploits their intact visual channel, expanding opportunities for an earlier vocabulary and a phonological development in both languages.

Therefore, the Bimodal Bilingual Approach reduces the linguistic delay providing benefits in communicative and cognitive flexibility. It enhanced metalinguistic awareness and problem-solving skills.

Moreover it provides a total accessible communication, so that children have the possibility, when they have some problems with the spoken language or with the CI (for instance if the device does not work properly), to communicate with the sign language instead of being silent.

2.4 Final considerations

People with preverbal hearing impairment differ one another according to some variables such as degree and site of the lesion, choice of intervention and age at which deaf children receive the cochlear implant or the acoustic prostheses, and also the family background. Despite these features that indicate deaf people as an heterogeneous group, there are common difficulties with regards to the oral language acquisition.

Results of many linguistic studies demonstrate the relevance of knowing a sign language as a help to learn the oral one. These studies contradict the oralistic thesis, which considers the sign language as a disturbance element for the spoken language acquisition, indicated the Bimodal Bilingual Approach as best solution.

Therefore, this particular bilingual method is a real richness for deaf people not only from a linguistic and cognitive point of view, but it also presents an important socio-cultural aspect. In fact, it favours the child's integration both in hearing society and in deaf community with the consequent elimination of the integration problem.

Chapter 3: Linguistic studies about hearing-impaired populations

3.1 How hearing impairment affects the oral language

Hearing loss is more a linguistic problem than a sensorial deficit because it affects the normal language acquisition and, consequently, the normal school curriculum. In fact, language is the way we use to teach all school matters, i.e. all the subjects pass through the language.

As we have seen, there are many several features which characterize the hearing impairment, such as: the onset and the degree of hearing loss, the kind of intervention, the age in which it is made and also the family background. Thus, deaf population is a heterogeneous group.

Despite this fragmentation, some studies⁶ have investigated the linguistic competence in comprehension and production, mainly in three different groups: orally-trained children with cochlear implants, native signers, and non-native signers, also including foreign deaf teenagers. Results show that there are common problems across all these typologies and also in deaf adults. In fact, hearing impairment is often synonymous with poor vocabulary and limited grammatical competence.

Evidence of that comes from a research made by Rinaldi and Caselli (2009): their data about a comparison between deaf children and same-age hearing children show that the first group had a significant delay in vocabulary and grammar. In fact, they produced fewer sentences, mostly shorter and containing few functional words.

The difficulties with functional words are attested in many studies. These unstressed elements, such as articles, clitic pronouns, prepositions, and morphological elements seem to be difficult to process because they have no lexical meaning.

Although deaf people follow the same phases of their normal-hearing peers in the language acquisition, they make atypical mistakes which also differ from the structures produced by foreigners learning English (Volterra and Bates 1989).

A preliminary study made by Quigley, Power and Steinkamp (1977) investigated the comprehension and the production of different linguistic structures typically presents in the English language. The authors administered the Test of Syntactic Abilities (TSA) to a group of 450 hearing-impaired people and showed that the

⁶ Chesi (2006); Volpato (2008); Fabbretti et al. (1998); Ajello et al. (2001); Volpato and Adani (2009); Volpato (2012); Friedmann and Szterman (2006); Friedmann et al. (2008); Bertone and Volpato (2009); Bertone et al. (2011).

difficulties encountered by this group are similar to that encountered by normal-hearing children with much lower age.

Results also showed a series of non-standard structures which are not attested in normal-hearing children. For instance, in embedded relative clauses, there is a frequent use of eliding a thematic role if its referent is already present in the previous sentence as in (1)⁷:

- (1) *John cashed the girl and he scared \emptyset

Target: John cashed the girl and he scared her

Another interesting phenomenon is represented by the construction of a relative clause duplicating the lexical DP⁸ as in (2) or omitting the pronoun as in (3):

- (2) *John saw the boy who the boy kicked the ball

Target: John saw the boy who kicked the ball

- (3) *I help the boy's mother was sick

Target: I help the boy's mother who was sick

Both solutions are strategies used to bypass the inability to deal with referential pronouns.

This study also indicates that hearing-impaired people tend to omit or substitute complementizers with full Wh-elements⁹, and that they have difficulties with the verbal phrase (VP), in particular with auxiliaries and modals.

These non-standard sentences produced by English deaf people are compared with the sentences produced by another atypical population, namely SLI¹⁰ children (Leonard et al, 1988). With regard to SLI children, their non-standard productions are based on phonological patterns, i.e. they seem unable to correctly agree functional morphemes because they are phonologically non-salient. In fact, these morphemes are

⁷ Examples in (1-2-3) come from Chesi (2006:45)

⁸ In linguistics the term DP is used to indicate the determinant phrase that hosts the determinant and the following full noun.

⁹ Wh-elements are question words (e.g. who, which, what, how, etc.).

¹⁰ SLI children are preschooler infants affected by specific language impairment.

non-syllabic, without stress, subjected to deletion in production and do not occur in final position. However, this evidence is not attested for deaf people because their atypical productions occur both in written than in oral performance.

Also the hypothesis that the sign language has an inter-linguistic influence for non-standard productions is rejected. Fabbretti and Caselli (2001) claimed that the sign language uses the visual-gestural channel, which totally differs from the oral one. Moreover, hearing-impaired people who are not native signer produce the same atypical forms as native signers thus proving that the inter-linguistic hypothesis is improbable (see Fabbretti and Caselli 2001; Volterra and Bates 1989).

However, these non-standard forms cannot be associated to the productions of other atypical populations. Chesi (2006) analysed them and claimed that hearing-impaired people never produced impossible errors. In other words, each atypical form seems to be naturally present in at least a language in the world. This is a great contribution in support of Chomsky's theory about Mental Grammar (see Chapter1).

3.1.1 Difficulties with functional elements

The evidence found for English deaf people seems to be shared also by Italian ones. Beronesi and Volterra (1986) and Rampelli (1989) indicate that Italian deaf people have a poor vocabulary and difficulties in comprehension and production of long and syntactically complex sentences (i.e. relative, subordinate and passive sentences). They systematically omit determiners, pronouns, prepositions, or sometimes substitute them with ungrammatical forms.

Chesi (2006) claims that article omissions are a typical phenomenon in deaf people's production. However it is not present an asymmetry between oral and written productions in omission and substitution of right and wrong forms, variables are present for instance, for what regard definite and indefinite forms and their position in the sentence. In fact, there is a high omission rate of definite and indefinite forms, while there is no atypical addition of these elements. Moreover, the omission is more frequent for articles in post-verbal position than in pre-verbal position.

Clitics are in complementary distribution with noun phrases because both elements receive the same thematic role from the verb.

From the comparative analysis it is evident that in free production, problems of agreement between clitics and their referents as well as wrong case assignment are

infrequent. With regard to clitic pronouns, Chesi observes that the tendency is to avoid the production of these functional elements through the repetition of the lexical object, as in (4a)¹¹. However, sometimes the thematic role is completely omitted, as in (4b):

- (4) a. Poi il topo scappa e arriva il gatto per acchiappare il topo

Then the mouse escapes and arrives the cat to catch the mouse

Target: Poi il topo scappa e arriva il gatto per acchiapparlo

(Then the mouse escapes and the cat arrives to catch it)

- b. Il gatto è andato nel frigorifero, e ha chiuso

The cat went to the fridge, e closed(3pers, sing)

Target: Il gatto è andato nel frigorifero e lo ha chiuso

(The cat went to the fridge and closed it)

The results of Chesi's analysis show that 79% of clitic forms are in a proclitic position¹². It seems that deaf people prefer to use preverbal positions when there are complex verbs (Fabbretti 2000).

Correct clitic forms seem to be equally distributed between oral and written production, while the amount of omissions seems to be higher in the oral production.

Another recent study (Volpato 2008) investigates the production of clitic pronouns by hearing-impaired individuals. In particular, the author studied the third person accusative clitic pronoun finding that, when gender features are not visible on the pronoun, because the vowel is elided, as in the feminine singular, gender features are not accessible, while they are always accessible in the plural (see 5a-b for singular, and 5c-d for plural¹³). Volpato (2008; 339-340) claims: "it is easier to produce those

¹¹ Examples in (4a-b) come from Chesi (2006:66-67)

¹² A proclitic position is the position of a clitic when it is attached to an adjacent word, i.e. in a preverbal position (e.g. *lo ha chiuso*), while if the clitic is in the end of a word, i.e. in postverbal position, it is in an enclitic (e.g. *acchiapparlo*).

¹³ Examples in (5a-d) come from Volpato (2008:336-337)

forms the structure of which is complex from a morpho-syntactic point of view, i.e. structures specified for plural features (i-e). In contrast, clitic pronouns specified for singular features (o-a) are difficult not only from a morphological and syntactic point of view but also from a phonological one, because they may lack overt realization”.

(5) a. L’ho capito

(mas, sing clitic pro) I’ve understood it

b. L’hai vista

(fem, sing, clitic pro) You saw her

c. Li ho capiti

(mas, plu, clitic pro) I’ve understood them

d. Le hai viste

(fem, plu, clitic pro) You saw them

Hence, singular features (o-a) are difficult to locate because of their morpho-phonological and syntactic nature, and deaf people often fail to compute them. On the other hand, individuals easily produce structures that are syntactically more complex, namely the plural ones. The author claims that, thanks to the greatest number of visible features, these structures are more evident, stressing a triggering force for plural number features.

Fabbretti et al. (1998) analyse the written productions of 10 Italian deaf native signers finding a selective difficulty with morphology. Results showed frequent omissions and substitutions of free-standing functional words, while errors with bound morphology are infrequent. In fact, it seems that bound morphology is memorized with the lexical word as a unique element; on the other hand, free morphology is problematic because of its short non-salient nature. Deaf children tend to overcome the difficulties with these elements focusing their attention on those words that are bearers of meaning, thus simplifying the comprehension.

Also Ajello et al. (2001) studied the fragility of free morphology in spoken and written Italian language. He claims that free morphology is not particularly salient from

an auditory point of view, and for this reason, it is characterized by fragility and high alteration. With regards to free morphology, the results of his study show a systematic omission of determiners and prepositions. In particular, there is a more frequent omission of the masculine article (*il*) than the feminine one (*la*). In fact, the feminine form seems to be more salient because the syllable is more open and the vowel marking the feminine singular ‘a’ is the most visible vowel. This feature of the feminine gender is salient also for normal-hearing children who acquire Italian as their mother tongue (Antelmi, 1997).

Moreover, Ajello et al. (2001) claim that hearing-impaired children tend to have more problems with the prepositions ‘a’ (to), ‘di’ (of) and ‘da’ (from), while the preposition ‘per’ (for) is less fragile. Authors indicate that, however the first three of those prepositions are widely used in the Italian language, they have many different syntactic functions, i.e. they play more than one thematic role (for instance the preposition ‘a’ can be used both for the locative and the benefactive theta role). On the other hand, the preposition ‘per’, although it is less used, it seems easier to select than the others because it is not ambiguous.

Results show another important problem in production regarding adjectives. In particular, hearing-impaired children tend to overextend the masculine singular form also when the feminine one is targeted, as in (6a)¹⁴. This phenomenon occurs also in the case in which both the masculine than the feminine plural forms are targeted, as in (6b).

(6) a. La gonna azzurro

The (fem, sing) skirt(fem, sing) blue (mas, sing)

Target: la gonna azzurra

(the blue skirt)

b. Siamo molto contentissimo

(we) are very happy(SUPER, mas, sing)

Target: siamo molto contenti

(we are very happiest)

¹⁴ Examples in (6a-b) come from Ajello et al. (2001:69-70)

Newport and Supalla (1992) claim that the difficulties with written language encountered by deaf people are the result of poor competence with the oral language. As we have seen, grammatical morphology is difficult to acquire after the critical period for language. Moreover, these parts of speech, as for instance free-standing morphemes, that we have seen to be more problematic to be comprehended and produced, are mainly identifiable through oral language. i.e. they are difficult to identify with reading lips and not occur in sign language.

Also hearing children have a period in which they omit articles and other functional words. They are sensitive to the pattern weak/strong, hence these weak items are not salient from a phonological point of view and for this reason, they are omitted.

However, the phonological weakness hypothesis is not valid for deaf people. In fact, they omit words and functional elements regardless of the weak/strong pattern. Their difficulties are not related to the phonological competence, but to the syntactic one.

3.1.2 The verbal domain

In his research, Chesi (2006) also investigates the verbal domain, finding that deaf children have difficulty to agree the subject with the verb. For instance, he observes that there are frequent substitutions of the third person singular with the others as in (7a), and the use of the singular form instead of the plural one, as in (7b)¹⁵:

(7) a. Dove va tu?

Where go(3pers, sing)you?

Target: Dove vai tu?

(where do you go?)

b. è mio carte

is mine(mas, sing) cards

Target: sono mie le carte

(cards are mine)

¹⁵ Examples in (7a-b) and (8) come from Chesi (2006:99-107)

In addition, it is common the use of the infinitive form in main clauses and sometimes in embedded clauses in which a finite verb would be required, as in (8):

(8) Dopo fare i compiti io!

Then do(3pers, sing)homework I!

Target: Dopo faccio i compiti

(then I do my homework)

The author notices that deaf people have also particular difficulties to deal with modal, copulative, and auxiliary verbs. These verbs are semantically different from lexical verbs, in fact they do not assign any thematic role. Nonetheless, they bear tense and agreement features. In Italian, except for the copula, modal and auxiliary verbs are followed by gerund or past participle and they have to share the same features.

While modals are used correctly (although they are very rare), auxiliaries cause some problems. For instance, the auxiliary *essere* ‘to be’ tends to be substituted by the auxiliary *avere* ‘to have’, as in (9a), or to be omitted, as in (9b).

With regard to copulative verbs, the verb ‘to be’ has the same features of the functional free morphology: it is short and without evident meaning. For this reason, it is often omitted (see 9c)¹⁶.

(9) a. Tom ha scivolato

Tom aux-have slipped

Target: Tom è scivolato

(Tom has slipped)

b. Quando finita la scuola

When finished the school

Target: Quando la scuola è finita

(When school is finished)

¹⁶ Examples in (9a-c) come from Chesi (2006:81-85)

c. Si mia scuola

Yes my school

Target: Si è la mia scuola

(Yes, it is my school)

The most important phenomenon is the large use of optional root infinitive (10 a-b)¹⁷:

(10) a. Poi dopo mettere così

(Then put in this way)

b. Poi andare a casa

(Then go home)

Tense and person features, which are lost when using the infinite form instead of the finite one, are expressed by adverbs or pronouns.

The use of optional root infinitives is a phenomenon also observed in normal language acquisition. Rizzi (1993/4) hypothesizes that, at a certain level of the syntactic tree, there is a truncation: under that level, categories are correctly projected, above that level, no category is projected. The truncation hypothesis affects children until the age of three.

They produce root infinitive instead of the correct form of the verb because they fail to move constituents higher than the truncation level. When children grow up, the missing part of the syntactic tree develops because they acquire subordinate structures, and the production of root infinitives decreases.

With regard to deaf children, data show that, even though they produce a root infinitive instead of the correct verbal form, they also use adverbs which are in a higher position than the verb in the syntactic tree. Hence, the highest positions of the syntactic tree are not affected by truncation. Chesi observes that it is more probable that the problem concerns the non-knowledge of the paradigms.

¹⁷ Examples in (10a-b) come from Chesi (2006:102)

3.1.3 Complex sentences

The linguistic deficit in hearing-impaired individuals is to be attributed to the inability to deal with the syntactic structures of the language. In addition to the problems with functional elements and verbal morphology, many difficulties involve the higher part of the syntactic tree, i.e. the CP layer¹⁸.

It is in this domain that we find the most complex structures, as for instance relative clauses. Their complexity is due to the presence of long distance dependencies between constituents. In particular, we can distinguish restrictive subject relative clauses (11a) and restrictive object relative clauses (11b)¹⁹.

- (11) a. [Il cavallo [che <il cavallo> insegue i leoni]]

[The horse [that <the horse> chases the lions]]



- b. [Il cavallo [che i leoni inseguono <il cavallo>]]

[The horse [that the lion chase <the horse>]]



Volpato and Adani (2009) explain that object relative clauses are more complex than subject relative clauses because, while in latter the relation between the relative head and the position from which it has moved is local, i.e. it is short, in the former the movement is longer, in terms of distance dependency. Therefore object relatives are more difficult to process, comprehend and produce. The authors find evidence that subject relatives are easier than object relatives with embedded subjects in preverbal position, and the latter are easier than object relative with the subject in post-verbal position (12). This difficulty is due to the fragile subject-verb agreement occurring with post-verbal subjects, which is only based on one relation, i.e. AGREE (for more details see Volpato and Adani 2009, chapter 6). The problems for deaf people to deal with this particular structure is due to the difficulty to keep in ‘stand-by’ the morphological information until they encounter the post-verbal subject.

¹⁸ The CP layer is the position of the syntactic tree which hosts complementizers, Wh-elements and embedded clauses.

¹⁹ Examples in (11a-b) and (12) come from Volpato and Adani (2009:2)

Moreover, a post-verbal subject is in most cases unexpected, since in Italian the unmarked word order is SVO (subject, verb, object).

(12) [Il cavallo [che *pro* inseguono i leoni <il cavallo>]]

[*The horse [that pro chase the lion <the horse>]]*

Volpato (2012) investigates both the comprehension and the production of relative clauses by hearing-impaired individuals with a cochlear implant. As for comprehension, the author found that cochlear-implanted children are less sensitive to number cues for the disambiguation and interpretation of object relatives with preverbal subject. In fact, they fail the computation of the plural verb morpheme ‘-no’ (as in 11b: *inseguono*).

The comprehension of object relative clauses with post-verbal subject seems to be difficult also for normal-hearing children. However, this difficulty is emphasized in hearing-impaired children because they are strongly instructed to the SVO order for the Italian sentence construction.

The asymmetry between subject relatives and object relatives persists also in production. However, the author highlights different strategies that hearing-impaired children adopt in order to avoid the production of both complex structures.

To overcome the production of a subject relative clause their strategies consist in the production of a simple sentence with SVO order, in the change of the target verb, or in the production of an object relative instead of a subject relative.

With regard to object relatives their strategies consist in turning them into passive relatives, in producing a simple SVO sentence, in changing the verb, or in producing subject relatives with thematic-role inversion.

Another strategy that often occurs with both structures is the use of a Wh-element as filler instead of the complementizer ‘che’ (that), as in (13a-b)²⁰:

²⁰ Examples in (13a-b) come from Volpato (2012:241-242)

(13) a. Mi piace il bambino quello *dove* alza l'elefante

Target: mi piace il bambino che alza l'elefante

I like the child that (where) raises the elephant

b. I bambini *dove* i vigili li fermano

Target: I bambini che i vigili li fermano

The children that (where) policemen stop them

This particular strategy is also attested in young normal-hearing children by Guasti and Cardinaletti (2003).

Further data are provided by a recent study carried out by Friedmann and Szterman (2006) that examine the linguistic competence of Hebrew-speaking hearing-impaired children who are orally trained. To study the comprehension, the authors proposed two different structures derived by Wh-movement: relative clauses and topicalization sentences. In fact, both structures are derived by the Wh-movement of the object from its original position, after the verb, to a clause-initial position in the CP layer.

With regard to topicalization sentences, the authors chose this kind of structures because since they differs from SVO sentence in the syntactic movement of the object (e.g. OVS: the girl is drawing this woman; instead of SVO: this woman is drawing the girl). Moreover, they also differ from relative clauses because they do not include embedding and maintain the same morphemes of the SVO.

Also the results of this study confirm that hearing-impaired children have difficulties to deal with sentences derived by movement with the object.

OVS order seems to be more problematic than OSV. However, in the OSV comprehension task, before indicating the picture, the participants tended to repeat aloud the subject and the verb and then pointed to the agent. The authors suggest that this phenomenon is a strategy of referring to the two final words of the sentences.

For relative clauses, they proposed a picture-matching task with sentences that included simple SVO sentences, subject relatives, and object relatives. All the sentences were semantically reversible.

Results show that deaf children encounter difficulty in the comprehension of object relatives, while in the other structures, they perform above chance level. In the

relative clause elicitation task for production, the authors underline that the participants have significant difficulties even with subject relatives. Nonetheless, these sentences are more easily produced than object relatives.

Both in subject and object relatives, children tend to produce a resumptive pronoun as in (14 a-b)²¹:

(14) a. *Subject relative clause:*

Ze ha-yeled she-hu roxec et ha-aba

This is the boy that he is washing the father

b. *Object relative clause:*

Hayiti roce lihiot yeled she-safta malbisha oto

I would like to be a boy that grandma dress him

However, in Hebrew the use of resumptive pronouns in object relatives is grammatical, even though they are only attested in young children's production. This evidence and the great amount of resumptive pronouns used by deaf children in the elicitation task suggested to the authors that these elements might also help in the comprehension of object relative clauses, which are so problematic. Hence, they developed a sentence-picture matching task with 20 object relatives without a resumptive pronoun and 20 object relatives with a resumptive pronoun. Results confirmed the authors' hypothesis because object relative clauses with a resumptive pronoun were comprehended significantly better than the others.

Therefore, resumptive pronouns can help children in dealing with relative clauses. In fact, the presence of this pronoun does not involve movement but dependency, thus supporting the evidence that the deficit of hearing-impaired people in comprehension and production of object relatives does not concern long-distance dependency in itself, but it is due to the syntactic movement and to the consequent non-canonical order of the constituents.

All the above mentioned studies showed that the deficit with relative clauses seems to be reduced when in the sentence a resumptive pronoun is placed in object position.

²¹Examples (14a-b) come from Friedmann and Szterman (2006:63-33)

Analysing the productions of 14 deaf children orally trained, Friedmann et al. (2008) found that these school-age children use specific strategies to avoid the production of object relative clauses, such as: paraphrase of the sentence, change of the verb, use of a reflexive verb, or production of a resumptive pronoun in embedded subject position.

The non-canonical order of sentence constituents seems to be a factor that affects hearing-impaired people's abilities. Hence, in another study, Friedmann and Szterman (2011) investigate if the absence of linguistic input may compromise the comprehension of non-canonical structures. In particular they focus on the comprehension, production and repetition of *Wh*-questions.

The authors show that the production of *Wh*-questions is always impaired while there is an asymmetry in the comprehension of object *which*-questions and object *who*-questions. They find that the former are more problematic. While subject questions are intact because the *Wh*- element does not cross other DP arguments of the verb, in object questions, the internal argument crosses the external argument causing difficulties in the correct interpretation of the sentence.

In other words, despite the presence of a *Wh*-movement, in subject questions the structure maintains a canonical order of its constituents, while in object questions, the order is non canonical with the theme that precedes the agent. Moreover, object *which*-questions differ from object *who*-questions because the object 'which' includes a full noun phrase (e.g. 'which dog' in 15b) and it has to move across the subject that is a full noun phrase too.

(15) a. *Object who-question:*

Whomⁱ does the girl wash tⁱ?

b. *Object which-question:*

Which dogⁱ does the girl wash tⁱ?

It seems that, in the course of derivation, the hearing-impaired children fail to correctly assign thematic roles by exchanging the internal role of the verb with the external one. Hence, the object 'which' is confused with the agent that is the subject of the sentence.

This inability also affects normal-hearing preschooler children. However, they solve the comprehension problem around the age of 6, while for deaf children, the problem persists owing to the absence of a rich linguistic input.

3.2 Native signers and the development of strategies to deal with the oral language

In the previous chapter, we have seen that the knowledge of a sign language does not influence negatively the development of the oral language. Moreover, many linguistic studies suggested that the best educational approach, not only from a linguistic point of view, is the Bimodal Bilingual Approach.

Even though the sign language does not affect language acquisition negatively, it seems that sometimes it influences the way to deal with the oral language. Bertone and Volpato (2009) and Bertone et al. (2011) investigate which strategies native signers adopt to comprehend and produce some sentences of the Italian language.

In the comprehension task (TCGB²²) used to investigate native signers abilities, the authors noted that the participants, in order to understand the oral language, use every piece of information they have at their disposal, but they avoid the computation of functional elements. There are different strategies that they use, for instance, when possible, they rely upon the linguistic knowledge of their mother tongue (in this case the LIS) and transfer it to the Italian language. Other strategies consist in considering the linear word order, or to rely on their world knowledge.

Some errors made by native signers are due to interference of sign language in the interpretation of Italian sentences. However, in some cases, LIS has a positive influence on the comprehension of some complex sentences, like for example relative clauses, or sentence regarding events which are already finished. For instance, the word 'fatto' (done) in LIS is realized with a specific sign following the sign for the verb and, at the same time of articulation, the Italian word 'fatto' is labialized by the signer.

This co-articulation of sign and labialization help native signers when they meet an Italian sentence having the word 'fatto', suggesting them that the event is finished.

²² TCGB (Test di Comprensione Grammaticale per Bambini 'Test of Grammatical Comprehension for Children) is a standardized test created by Chilosi & Cipriani (1995) used to assess the comprehension abilities of hearing children from 3;6 to 8. It investigates eight different structures of the Italian language: locatives, inflectional morphology, affirmative active sentences, negative active sentences, affirmative passive sentences, negative passive sentences, relative clauses and sentences with dative complements.

The strategy to use the pre-existent linguistic knowledge to comprehend the foreign language, even though sometimes it causes misunderstanding, is an important and valid ability. We adopt this strategy every time we start to study a foreign language by comparing it with our mother tongue, making assumptions, generalization, and also errors which will help us to learn it.

The same processes happen for native signers who learn the oral language; and this explain the importance for deaf children of knowing the sign language, because without it they have not a linguistic base as support to facilitate the learning of the oral language.

When native signers have no linguistic strategies to use, they have to rely on their knowledge of the world, in particular on the probability or improbability of a situation.

Moreover, native signers, who are strongly instructed to the canonical order of constituents (SVO) of the oral language, use the linear order to try to comprehend sentences. For instance, with a sentence with the locative ‘tra’ (between), they are not able to derive the meaning of the sentence by only using lexical words since they rely on the linear order and misinterpret the position of the three elements as in (16)²³:

(16) La palla è tra il tavolo e la sedia

The ball is between the table and the chair

They leave out the verb considering only the linear order of lexical elements, that is: BALL > TABLE > CHAIR.

They read the word ‘tra’ (between) and consequently they indicate erroneously the word in the middle as the element in the central position.

On the other hand, for instance, the prepositions ‘da’ (from) and ‘a’ (to) are a positive knowledge that helps in the comprehension of the locative sentence. These strategies are also attested in the normal-hearing children analyzed by Chilosi et al. (2006).

²³ Example in (16) comes from Bertone and Volpato 2009:60

The authors also show a difficulty for deaf children to deal with passive sentences. In particular with those sentences that are also reversible, i.e. both the constituents can be potential subjects for the verb (e.g.: the boy is brushed by his mom).

If the sentence is irreversible, i.e. the subject is animated and the object is unanimated, there is no problem. Children rely on their knowledge of the world and on semantic plausibility.

Bertone and Volpato claim that: “the interpretation of a sentence is mediated by knowledge of a world labelled by linguistic knowledge and it is not a spontaneous answer” (Bertone and Volpato, 2009:59).

If we want to joke and say that ‘the ice-cream eats the boy’ they tend to indicate the picture in which there is the boy who eats the ice-cream because of plausible reasons, while the meaning expressed by our sentence is impossible in the real world.

Teachers have to keep in mind this inability to deal with implausible events. Moreover they have to help deaf students to go beyond their knowledge, showing them that it is also possible to say sentences with no meaning or which are not plausible.

3.3 Evidence from others impaired populations: how to do rehabilitation

All linguistic studies carried out to investigate the competence of hearing-impaired people show difficulties in dealing with the syntactic movement and the non canonical order of the constituents.

Despite the deficit with complex sentences, sometimes we have seen that they can be easier to comprehend than simple ones thanks to the richness of information, as for instance plural features (i-e) instead of singular features (o-a).

These complex structures are sometimes not taught to deaf individuals because teachers think they are much difficult for them. This is a very problematic and wrong way of thinking. If on one hand, it is true that these sentence typologies are very complex, on the other hand, there is no reason to hide them to those who are learning the language. In fact, these structures are frequent in written texts in the Italian language. The mission of a teacher is not to reduce the linguistic input, but to simplify it and make it accessible to this particular population.

Moreover, studies from other atypical populations interestingly show that easy structures are learned through the rehabilitation of more complex ones.

These atypical populations that present linguistic disorders in syntax are children with SLI (Specific Language Impairment) and people with agrammatism (or Broca's aphasia), i.e. a selective impairment due to a brain injury.

While SLI children are unable to transfer the thematic role from the trace to the moved element, agrammatic people are not able to access the CP layer because their structure is truncated below that level (Friedmann and Grodzinsky, 1997).

With regard to SLI children's rehabilitation, interesting suggestions/findings come from Levi and Friedmann (2009), following previous studies about agrammatic patients' rehabilitation strategies proposed by Thompson and Shapiro (1995; 2005), Thompson et al. (1997; 1998; 2003), and Friedmann et al. (1997; 2002; 2005).

From the analysis of all these studies, important considerations are developed:

- a) It is necessary to rehabilitate the higher layers of the syntactic tree, in order to have a positive effect also on the lower layers;
- b) By rehabilitating only one structure it is also possible to support the indirect rehabilitation of other structures that have the same syntactic properties, however, without positive consequences for structures of different typologies;
- c) According to the Complexity Account of Treatment Efficacy (CATE) of the group of Thompson (2003), rehabilitation has to start from more complex structures and, move on the simple ones only later.

Although these generalizations come from different studies ((a) from Friedman et al (1997, 2002, 2005, 2009), while (b-c) from the group of Thompson and Shapiro, 1995, 2003, 2005), they all seem to converge and be adopted as rehabilitative strategies.

What is evident from all these studies is that rehabilitation does not mean keep a single damaged structure and reactive it independently, without thinking at the whole syntactic system. The right procedure is to focus the attention on something more specific because it is not a structure that needs to be rehabilitated but a principle of the universal grammar.

As we have seen, starting from these generalizations, Friedman and Levy (2009) try to rehabilitate a child with SLI, thus confirming the efficacy of the linguistic theories.

According to the principle in (b), the authors, through the rehabilitation of relative clauses, obtained an improvement also in *Wh*-questions. Also the CATE seems to be adoptable because it is based on the Chomsky's theory of Principles and Parameters (1993), generalization that groups all languages because they share the same universal principles, also common among the different linguistic pathologies.

With regard to the rehabilitative hypothesis in (a), it seems not to preclude only the truncation theory. In fact, although SLI children do not present a truncation in the syntactic tree, the hierarchical order does not change. This consideration allows to postulate that the principle in (a) may be formulated also for SLI population, i.e. rehabilitating higher layers may have a positive effect also in the rehabilitation of SLI children.

In the light of these considerations, also for hearing impaired children the rehabilitation has to keep into account the linguistic theories and use specific methods to teach them.

First of all, it becomes evident that, if we give to the deaf child only and always simple structures, he/she will make experience only of SVO sentences and he/she will not rehabilitate other typologies of sentences. Teachers have to increase the deaf child's experience without reducing the linguistic input.

Moreover, the rehabilitative strategies have to find new and specific ways of intervention, also different from those used for foreign learners. In fact, when we teach a language we give explicit rules to the learner, that in most cases have no meaning for those who are studying. As we will see in the next chapter, grammatical rules have to be contextualized, they have to be 'possible' and 'useful' rules for those who are learning the language. We have a mental grammar that allowed us to acquire our mother tongue. When we teach a language, we have to give rules that reproduce the processes of our mental grammar.

3.4 Final considerations

From the linguistic studies about hearing-impaired people some interesting features are raised. First of all, the deaf population is extremely heterogeneous and this affects the way of teaching the language. In fact, they cannot be compared to foreign hearing learners who study Italian language because there is not the same variety into this

second group. Moreover, foreign hearing learners study a language having already a solid knowledge of their native language, while deaf learners often have no L1.

Despite this heterogeneity within the population of deaf people, all of them seem to have difficulties with complex structures that involve the syntactic movement of a *Wh*-element, and are also unable to deal with constituents when they do not display a canonical word order.

All these problems are due to hearing impairment that hinders the natural exposure to the linguistic input. Even if they have acoustic prostheses or a cochlear implant, they access input later than in the normal language acquisition. In addition, it is impoverished and not always continuous.

Hearing-impaired people need an education characterized by the simplification of the linguistic input (in terms of accessibility and comprehensibility), without impoverish or reduce it.

Teachers have to be informed about the hearing loss deficit and the consequent linguistic disabilities. Moreover they have to develop a program that works on the language, reinforcing the pre-existent competence and using it in order to provide deaf individuals with a linguistic input not only complete but also the as rich as possible.

Ajello et al. (2002:71) claim that “the linguistic input is tailored and simplified, reduced. So, as to fit their competence, as it is conjectured by hearers. It is an input basically reduced to its lexical content and structured so, as to follow semantic and pragmatic strategies. (...) The data we reported suggest the necessity of early didactic approaches with specific targets, so that the new deaf generations may better cope with the difficulties of integration”.

Therefore, new teaching strategies have to be devised to make the Italian language really accessible to deaf people: a teaching program which takes into account the individual needs of the hearing-impaired person, based on his/her own knowledge, skills, and rhythm of learning.

PART TWO:

Language teaching approach

Chapter 4: Language teaching approach

4.1 The learner

4.1.1 The learning machine

Balboni (2008:13) claims that: “humans are machines for learning”, because the ability of lifelong learning distinguishes us from the other organism in the world. Hence, to know how we learn, we need to know how we are made.

Our “learning machine” is like a computer: brain is the hardware and mind is the software. As we have seen in the first chapter, the biological faculty of language is in the brain. The brain is subdivided in two hemispheres: the left one, which is characterized by analytical and rational mechanisms, and the right one, which organizes global and emotional perceptions. Then, there is the little brain where it lies the instinctive part of the computerized processes.

The language elaboration takes place into the two hemispheres where the different messages, both oral and visual, are elaborated through a sequence of two linked procedures: bimodality and directionality.

Bimodality means that both hemispheres are involved in the linguistic communication. Hence, when we study a language we have to use both the global and the analytical methods. However, there is a specific direction in which they are involved, i.e. the natural process begins from the global perception and then the analytic mechanisms are applied. Despite these evidences, the traditional approach of teaching often uses the opposite order, i.e. before theory and grammatical rules, than exercises and activities.

According to directionality, Gestalt Psychology²⁴ indicates that the human brain learns in a clear-cut sequence mainly made by three steps:

- 1) *Global perception* derived by intuition regarding context and general sense;
- 2) *Analysis* of the text, deepened focalization made by the brain spontaneously;

²⁴ Gestalt Psychology (*Gestalt*-from German-means "essence or shape of an entity's complete form") is the theory of mind and brain of the Berlin School. It tries to understand the laws of human ability to acquire and maintain stable percepts in a noisy world.

- 3) *Synthesis* i.e. considerations that, in the natural acquisition, the human brain makes by itself. However, in educational learning it is important that teacher guides and helps students in this delicate phase.

The software, i.e. the mind, is the place in which the mental grammar develops. As we have seen, Chomsky (1965) indicates that we have from birth a device, the Language Acquisition Device (LAD), which gives us the instinctive and innate faculty of acquiring language.

In order to teach a language it becomes essential to know how the LAD works. In particular, the language teaching approach describes this mechanism subdividing it in five steps:

- 1) *Identification of the rules of a specific language:*

The mind observes the linguistic input received;

- 2) *Creation of hypotheses about the operation of those rules:*

The mind, basing on it has observed, elaborates hypotheses on the language, both from a grammatical and a pragmatic point of view;

- 3) *Check of hypotheses:*

The assumptions need to be checked, the student can do it by himself/herself thanks to procedures like cause-effect, and then he/she can has a further check asking the teaching's help;

- 4) *Setting of those rules through focused and repetitive tasks:*

Those hypotheses, which are created and then checked, need to be settled, computerized. The setting is usually made through structured exercises;

- 5) *Considerations on the rules (managed by the teacher) and focused on mental and graphic representation:*

This is not a spontaneous phase of acquisition, indeed it belongs to an aware learning. It is the crucial step for rules systematizing. Moreover, it is important because it allows students to monitor their performance. In this last step the

figure of the teacher is fundamental because he/she has to confirm what students have learned. Furthermore, he/she have to add that information of the language that can be difficult to observe by students.

In order to facilitate acquisition Krashen (1981) claims that the teacher has to follow two important principles. First of all the linguistic input has to be comprehensible, and the attention has to focus on the meaning rather than on the form. Only with a really accessible input the LAD starts its natural process. The second thing to keep in mind is to maintain the natural process of development. In other words, the teacher has not to give input casually, he/she has to give linguistic input following the natural order of learning, according to the ‘zone of proximal development’²⁵ that is the distance between the learned part (*i*) and the potential learnable part(+1). Hence, the natural order is: *i + 1*.

In addition, Krashen indicates that, to acquire *i + 1*, it is necessary that the ‘affective filter’ is not inserted. The ‘affective filter’ is a bio-neurological mechanism that the brain uses to defend from stress, anxiety or failure. All these negative feelings risk to activate the filter as a sort of self-defender, blocking the process of acquisition. It means that, in order to allow students to learn, it is necessary to create a relaxed and pleasant situation. On the contrary a stressful and negative situation is just a way to lose precious time for learning.

4.1.2 The memory

The memory system is responsible for the ability to maintain acquired information for a certain period of time in order to be available for using it to carry out specific tasks. Therefore, memory has an important role in the process of acquisition because students have to store what they learn and to get back when they need it. Our memory is subdivided mainly in short-term memory (STM) and long-term memory (LTM).

The short-term memory is also called working memory (WM)²⁶ and contains the information received by the input. The reason of its name is due to its limited

²⁵ The zone of the proximal development is a concept created by Vygotsky (1990). He postulated that there are three areas of development: actual, potential and proximal.

²⁶ Recent studies (Cowan N. 2008; Aben B., Stapert S. and Blokland A., 2012) have tried to distinguish STM from WM. In fact, regardless of the definition, in STM there are some measures of memory in the short term that seem routine and do not correlate with cognitive aptitudes (those usually identified with

permanence in memory and also to a limited quantitative capacity. In fact, it memorizes not more than seven items at a time. Hence, activities have to keep in mind this limitation concentrate the attention in few and specific goals. In addition, this memory overloads easily affecting also attention. It seems that the attention is maintained for about fifteen minutes and for this reason lessons should be structured in short activities with frequent breaks which can be used to sum up, verify the comprehension, drink, and so on.

The LTM is a store of permanent information characterized by different typologies of memory. In particular there are:

- a semantic memory, which works to interpret and memorize the language;
- a factual memory regarding general knowledge of things;
- a procedural memory responsible for the way in which carried out;
- an episodic memory that deals with events and personal experiences.

Hence, long-term memory hosts our knowledge of the world and what we have acquired during our life.

With regards to semantic memory, the stock in long-term memory happens at the meaning level. In fact the lexicon is stocked in the semantic memory only if it is considered inside a context, i.e. for instance, memorizing a list of words without contextualized them is useless.

Balboni (2008) compares the memory system to a *watermelon* (figure 3) in which the external part (the peel) is the working memory, the white part is the middle memory (short-term stock), and the red part is the long-term memory, the acquired part. In addition, he compares the *watermelon seeds* to the lacks we have when we fail to recover some data earlier stored., In normal health condition lacks of memory consists on the inability to recover a stocked information. This happens mainly for two reasons: because of much time has passed from the storage and this influences a lot on the quantity of memory and its accuracy; or it may occur an interference between two

WM). WM is characterized by attention and processing speed. Moreover, it includes complex tasks and cognitive loads.

different events which are in contact, so the recent information can affect the less recent or vice versa, the stored items can influence new items causing inaccurate memories.

Moreover, the input has to go across the green part in order to be acquired because, if it remains outside, it persists just for fifteen minutes. Hence, information has to be codified from sensorial data to mental representations. Then the codified part is saved and recovered when necessary.

Figure 3

Short-term memory/ Working memory

Middle-term memory

Long-term memory

Gaps, lacks of memory

4.1.3 The role of motivation

The engine that moves our “learning machine” is motivation. In fact motivation plays an important role in the learning process because we put into memory only what we want. It seems there are three causes that govern personal motivation (Balboni, 2002):

- 1) *Duty*: even if sometime the sense of duty can be motivating, it does not bring to acquisition because it is perceived as an obligation activating the affective filter;
- 2) *Need*: it belongs to the left hemisphere and it is useful, although it presents two limitations. In fact, the need has to be perceived constantly and it stops when the student decides that he/she has learnt all that was necessary;
- 3) *Pleasure*: it is the main and stronger motivation for helping acquisition. It belongs to the right hemisphere but can also involve the left hemisphere becoming powerful. The pleasure is linked to a lot of thing, indeed there is not

only the pleasure of learning coming from the student. Teacher may stimulate the pleasure of variety and of discover new things every lessons, also creating leisure situations in with it is involve the pleasure of playing and competition (see Chapter 4.4.3).

This three motivation affect the student's approach to learning because he/she can develop the awareness that learning a language is fruitful (need) and that can be exciting (pleasure), also when the school curriculum imposes it (duty).

Since motivation plays this big role in the learning process, teachers have to stimulate it whenever is possible. In fact, even though a student is motivated by proper reasons, the linguistic training is a long and not always pleasant and easy path. Everyday lessons have to encourage the learner with always new and charming inputs to favour pleasure motivation, but also workable and functional to satisfy needs and self-esteem.

4.1.4 The key features of learning

Linguistic learning is characterized by some important features that a teacher has to keep in mind to do a good job. First of all, language is a social phenomenon, i.e. it is used in order to communicate with others. Thus, it is obvious that an approach with no real contacts creates a sort of artificial context which does not help the natural learning. Hence, we can study a grammatical rule alone, but then we have to test the rule in a communicative context. Language is a communicative tool that needs social learning.

Linguistic learning is also constructive because it is developed using the knowledge of everyone. It means that working in groups can favour the development and the increase of language because one can help another. Hence, the learning can be also cooperative.

Cooperative learning is an approach that has developed a lot in the last years. The idea is that it is important to put together different knowledge to help one another. Moreover, thanks to cooperation, many implicit factors are involved, such as the sense of availability, humility, empathy and responsibility.

All of them are relational conditions that we can naturally find in every communicative system. They are important to experience language learning and favour its development.

4.1.5 Each student is different

Learning is a mechanism characterized by many factors. Moreover it differs according to the learner who is studying the language. In fact, aptitude i.e. the major or minor facility to acquire a foreign language differs from one student to another although it is not correlated with the possibility of acquiring it. A student with innate linguistic skills is facilitate in the acquisition process, however he/she also needs to have devotion to duty. On the other hand, a person with minor aptitude to learn languages has the same possibility of acquiring them but he/she will make more efforts.

Gardner (1987) subdivides people according to five different types of intelligence:

- 1) *People with linguistic intelligence:* they display the aptitude not only in grammar and phonetic but also in pragmatic. Linguistic intelligence is concerned with the ability of certain people of speaking in public or writing and so on;
- 2) *People with logical-mathematical intelligence:* this type of intelligence guides the elaboration of mental thoughts. For linguistic learning, it helps grammatical considerations from a logical point of view;
- 3) *People with spatial-artistic intelligence:* this type of intelligence concerns the ability of reconstructing or modifying elements present in the space. It exploits the visual channel and consequently the visual memory helping, for instance, in the acquisition of lexicon associated to illustrations;
- 4) *People with musical intelligence:* this type of intelligence exploits the acoustic channel and helps the learner in the acquisition of phonology. For instance, people with musical intelligence are good with listening exercises and activity about songs;
- 5) *People with personal intelligence:* this type of intelligence concerns the aptitude to approach with others. Empathic personality and interpersonal abilities that facilitate at dealing with other people.

Gardner claims that there are also other features which influence learning: such as the different cognitive styles. According to the two hemispheres, the student can have

an analytic (systematic and reflexive) or a global (intuitive and irrational) style of learning. Moreover a person can have an aptitude to the theory while another can have more practical skills.

Another feature is the ability to learn from errors. In this case, the personal character is very influent. If a person is optimist he/she can find incitement also from bad results while if he/she is pessimist or timid, errors can become reason of problems.

Furthermore, a student can have the ability of making forecasts about texts based on context. This ability is very important because helps dealing with the language.

Oller (1979) talks about 'pragmatic expectancy grammar' referring on those cognitive processes which allow to forecast all that can be present in a text, making previews and helping comprehension.

Even though this particular skill is not present in every student, teachers may help them to develop it because it is a very great support for comprehension. There are two different tasks that favour the development of the expectancy grammar: cloze and puzzle. The cloze task aims to delete one word every seven losing the 15% of the text. The learner has to complete the text with the missing word choosing among a list of suggested words. The puzzle task is like a puzzle because words, or piece of text, are scattered and need to be reorganised. In section 4.5 we will see how comprehension and production develop and work.

4.1.6 The age of students

Another important variable among students regards the age. In fact, we have seen the importance of acquiring a language within the critical period.

However, even though the period for acquiring a language as L1 or L2 ends with puberty, learning languages as FL (foreign languages) is possible lifelong. Indeed, if on one hand, the mind plasticity decreases, on the other hand, motivation increases and also the metalinguistic awareness develops with adulthood.

According to mind, brain and motivation, we can distinguish four categories of people: children, teenagers, young adults, and adults.

While people learn to use mind and its mechanism over the years, brain elasticity differs across ages. During childhood, as well as during adolescence, it absorbs everything. Although, teenagers have a negative influence of hormones (e.g.

relationships, decision and styles are characterized by the need of independence and mood swings).

Young adults' brain is complete, it is full of knowledge, while adults have a more rigid brain due to untrained learning, with the consequent difficulty in the creation of new synapses.

With regard to motivation, for children the unique reason to do something is to amuse, to playing. They spend the majority of their time playing because they have not developed a life project yet.

Teenagers are in the middle, they sometimes think just to present time, other times they start to develop their own project.

Moreover, young adults, even though they have a project, a strong motivation, in most cases they are oppressed by parents and society. They fight to prove their maturity.

Adults have a concrete motivation of learning, they have understood the utility, i.e. the main reason is to satisfy a need.

At the light of this awareness, a teacher has to think about the different processes from the irrationality that affects childhood to rationality that characterized adults. He/she has to use a playful methodology with children, while teenagers sometimes are offended if adults approach them with plays. Young adults can play 'relearning' to get involved, otherwise adults do much efforts in role-play.

According to the age, also the way of considering teacher changes. In fact, children see the teacher as a "god", i.e. what the teacher does and says is law to follow with admiration. Teenagers have a dual vision, on one hand they hate teacher because of the simple fact he/she is an adult, on the other hand they can follow him as a model.

With adulthood the relationship is more formal, sometimes there is no desire of personal knowledge risking an anonymous approach which goes against the nature of language learning of social interaction.

Another variable influenced by age consists in the choice of contents. It seems obvious that teacher has to adapt the content according to motivation, skills, attitudes, needs and relationships: a playful approach for children characterized by pleasure of discover with songs and fairy tales; charming and miscellaneous tasks for teenagers; more serious and abstruse tasks for young people and adults.

4.1.7 The Language acquisition support system

As we have seen, the language acquisition is characterized by biological, neurological, innate, but also external factors.

In the past, the teacher's figure was seen as the source of knowledge who had to fill in empty minds of students with all his/her knowledge. Watson (1913), founder of the Behaviourist school, claims that the human mind is like a black box and for this reason human behaviour could not be studied inside but only through manifested expressions. For Watson the behaviour is the mere answer to a stimulus and it can be influenced by conditioning (see: Skinner, 1904).

However, around the Sixties, a new way of thought developed: Cognitivism. Its followers claim that the human mind is not a black box, and between stimulus and answer there are important mental computations responsible for the behaviour.

Thanks to the cognitive studies the way of teaching has drastically changed until the more recent Chomsky's studies (see Chapter 1).

Although the central role of those who learn, Bruner (1983) indicates that also the teacher's role is important. In addition to the 'zone of proximal development' where children acquired language, there is also the need of adult's help. Bruner claims that if there is a LAD which allows natural learning, it must also exist a language acquisition support system (LASS).

"System" because intervention has not to be always the same, it has to change in methodology and materials thank also to personal interchanges.

"Support" because the teacher is not the source, the model to follow. He/she has to be a manager who deals with the linguistic input, the levels and the models of the language, and also he/she has to coordinate the whole work having a global vision.

Therefore, the teacher has the role of guiding the student's process of acquisition. According to the five steps of LAD the teacher has to guide the learner's observation giving focused tasks, avoiding interferences and helping corrections. Moreover, he/she submits several exercises to contribute to the setting of rules and helps during the last process of consideration with a guided discovery of grammatical patterns.

What is really changed over the years is the focalization from the teacher to the student: nowadays the concentration is for learners. They are the "main character" of the learning scene while the teacher is the "director" who has to adapt the job according to the main character's needs.

4.2 What to know a language means

4.2.1 Language proficiency

The reason a language develops is to allow communication among people; hence it becomes important to know what communication means. Balboni (2002:55) claims: “Communicate means to exchange efficacious messages”. To exchange because communication always involves more than one participant (also when the addressee is fictitious), thus the interpersonal relations are fundamental, even though difficult from a social and emotional point of view.

Moreover the communication must be effective, i.e. it occurs with a specific goal, for instance to obtain something. The efficiency is evaluated by looking at the results of the communicative act. The communicative exchange is composed by messages made by verbal and non-verbal texts, independently from words and sentences. Thus, students have to learn the communicative approach regarding the foreign language he/she is studying.

The communicative act is also dealt by Hymes (1974) who describes it using the acronym “SPEAKING”:

- “S” as *Setting* i.e. the physical location with all its richness of symbols, objects, individuals, facial expressions and habits. All these features help the speaker’s talk;
- “P” as *Participants* and the rules of behaviour belonging to their culture;
- “E” as *Ends*, the reason why we communicate;
- “A” as *Act*, the communicative acts needed to obtain our goal;
- “K” as *Key*, the linguistic key i.e. the psychological relation established between the participants. It can be characterized by different elements such as availability, irony, sarcasm, anger, happiness etc;
- “I” as *Instruments*, which can be verbal or non-verbal, and also physical tools like telephone, chat line, internet and so on. Each of them uses a specific register (e.g. a friendly chat line is informal) adapted for that situation;

- “N” as *Norms*, i.e. the interactional rules to follow (e.g. the passage of talk). These rules seem to be more important than the linguistic ones because synonymous of politeness;
- “G” as *Gender* because there are a lot of communicative genders according to the goals we want obtain (e.g. instructions, conferences, funny jokes, indications, advices, etc.).

As we have seen, a language is not only the way of communicate belonging to a group of people, it is a cultural expression, a way to obtain goals and also a thinking and expression tool.

The education of languages aims at developing the communicative proficiency according to the model purposed by the Common European Framework²⁷.

Balboni (2002) summarizes the communicative proficiency subdividing it in four areas according to the different ability a speaker must have:

- 1) *Knowing the language*: ability to correctly use phonological, grapheme, lexical, textural, morpho-syntactic grammars;
- 2) *Ability to create language*: to control the linguistic abilities regarding oral and written comprehension, oral and written production, and also to produce dialogues, dictations, summaries, paraphrases, translation and so on;
- 3) *Ability to deal with language*: to correctly use pragmatic and socio-cultural aspects of a language as communication;
- 4) *Ability to integrate language with non-verbal languages*: to associate language with the proper non-verbal languages, that are gestural, proxemics, kinesics, vestemics and objectemics.

²⁷ The Common European Framework of Reference for Languages: Learning, Teaching, Assessment (CEFR) is a guideline used to provide a method of learning, teaching and assessing which applies to all languages in Europe. In November 2001 a European Union Council Resolution recommended using the CEFR to set up systems of validation of language ability. The six reference levels are becoming widely accepted as the European standard for grading an individual's language proficiency.

These four components are all important for a good and whole language knowledge and the teaching program has to deal with all of them allowing students to experience and improve their ability.

4.2.2 Socio-pragmatic proficiency

As we have seen it is useless to know the grammar of a language if we are not able to deal with the language producing communicative acts. The socio-pragmatic component, also called functional competence, realizes six different functions through these communicative acts. The functions are:

- 1) *Personal*: this function is shown when the student reveal his/her own personality characterized by feelings, emotions, thoughts, doubts, and impressions;
- 2) *Interpersonal*: this function is related to the use of language in order to establish, maintain or finish a communicative act (i.e. the fixed expressions of greetings, wishes, thanksgiving, etc.);
- 3) *Instrumental*: it is the use of the language to act on others, as for instance to give and receive instructions, advices, rules, and so on;
- 4) *Referential*: the use of language to describe something (e.g. a situation, an event or a scientific text);
- 5) *Metalinguistic*: it is the function that uses the interaction of the mother tongue with the foreign language (for instance to ask the meaning of a word or of a grammatical function, or to create a paraphrase to bypass a term that we don't know);
- 6) *Poetic-imaginative*: function used to produces rhythmic or metaphoric effects on the language in most of the case for imaginative reasons.

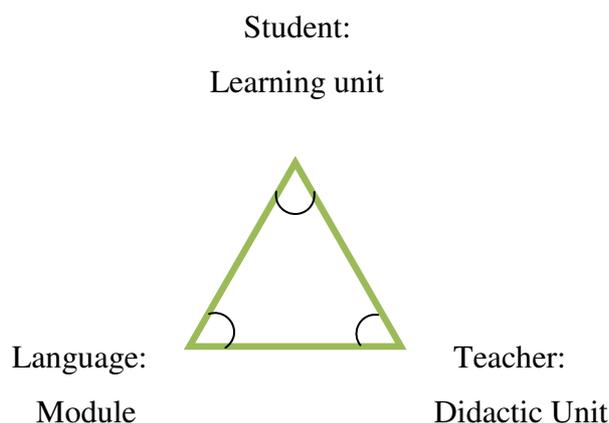
Language teaching has to balance also these functional aspects because they are essential to a complete proficiency of the language.

4.3 Modules, didactic units and learning units

The school curriculum for teaching foreign languages is developed subdividing the working plan in 'didactic units'. The language teaching approach has used the term 'unit' since Sixties, to indicate a scheme for the teacher, while the single lessons are called 'learning units' and consist of what the student learns in a single lesson. It is important to subdivide the didactic curriculum into smaller units because each lesson aims at a specific goal without leaving something outstanding. The student must have a clear idea of what the learning unit deals with, including what it must be already known and which contents will be acquired, i.e. what that has already learned and what in that specific lesson has to be studied.

Balboni (2008) explains the school curriculum with an interactional model made by three points, as in figure 4:

Figure 4



Therefore, each point focuses in one of the three didactic areas of interest, in particular the language is characterized by modules, i.e. blocks of proficiency which give the student a certification according to each level. However, as we have seen, the student needs a school curriculum characterized by short and definite lessons called learning units. Moreover, the teacher has to gather together the learning units with linked arguments i.e. a didactic unit focus on a linguistic setting and deal with the specific arguments of this setting in closed lessons (each didactic unit is usually made by four or five learning units). For instance the didactic unit about "Home" can be subdivided in single learning units according to the description of rooms, locative

adverbs to describe a room, typologies of houses, verbs and situations linked to the home.

Thus, the didactic units are complex linguistic tranches containing several communicative situations and different linguistic contents subdivided in learning units that follow the Gestalt model of: globality > analysis > summary.

There is a first phase of presentation and observation, then a phase of practice (making hypothesis and then verifying them), and a conclusive phase of production with the setting of contents (it is possible to see an example of learning unit in appendix).

With regard to didactic units, they are characterized by a initial part in order to explain the followed contents of each learning unit, and a more complex ending part in which the teacher has to check whether contents have been acquired, helping those who have some problems and giving extension activities to those who have a higher level of proficiency.

In addition to the linguistic program provided by the unit, it can be useful and pleasant to give students extra-linguistic contents about habits, lifestyle and curiosities through not only text but also games, songs or films (as we will see in the next section).

That because, as we have seen, it is important to satisfy also pleasure, and moreover because a language is a way of communicate belonging to a speech community; therefore, to understand it, it is important to know also this community and its culture.

4.4 Learning tools and activities

4.4.1 Linguistic and extra-linguistic tools

A language is acquired through the use of different tools, not only of linguistic nature but also from all the items that surround us. We are used to deal with a student's book, associated with a grammar and an exercises book, all of them structured in units, as we have seen in the previous section.

Moreover, it is important to teach students to deal with dictionary because it is important not only for looking up words but also to learn synonymous and sayings. We tend to prefer grammar instead of dictionary because learning the structures of a language is the base of learning, however dictionary is also important. For instance, knowing how to ask something to eat but asking peas instead of peaches may become a problem. Indeed, when we travel we bring with us a dictionary, not a grammar.

In addition to school books there are always recorder tools important for listening activities in class. Recorder can also be a personal tool of checking, in fact a student may record the voice, a personal oral production, and then listen to the recording.

We have talked about the importance of giving to the students extra-information regarding habits and culture. The main tool is film preferring accompanied by subtitle always in the foreign language in order to permit at students to use as much input as possible (acoustic and visual).

A film is a great contribution if used carefully, i.e. giving to students the right time to approach with it, for instance reviewing some scenes or dialogues, making break to discuss or ask explanation. Moreover, at the end it becomes fundamental to talk about it meditating on it and sharing impressions.

Nowadays extra-linguistic tools are characterized by multimedia materials; especially when students are young people they are used to spend their time in front of a computer. Computers can be a distracter, but also a great learning tool. It is sufficient to think about all those sites that deal with other languages and countries: social networks, music boxes, web search engines and so on.

These are sites that deal indirectly with foreign languages, however there are also programs which permit us to training the language improving self learning. They are, for instance, chat rooms, e-mails and video calls by using webcam.

For their intuitive and charming nature, these tools may become a very useful support, an always new method to do researches and deal with language proving pleasure without sense of duty or imposition.

4.4.2 Exercises and activities

Not all the strategies and the learning techniques are adapt for all students. As we have seen, they differ in types of intelligence and style of learning, so the different approaches has to be selected in order not to penalize someone favouring someone else. A teacher has to use the same item in different ways to help all the students whenever it is possible.

Balboni (2008) subdivides the learning techniques in exercises and activities. With regards to exercises, they are of manipulative nature and focused on setting rules

without particular attention to the LAD. They request commitment and diligence, not always motivating.

Activities are of creative nature, try to stimulate pleasure involving the use of personal attitude and intuition, with problem solving and filling gaps influenced by the expectancy grammar.

In other words, the teacher has to choose the learning techniques in relation to the conceptual coherence used to deal with a specific argument. Moreover, they have to focus on the didactic goals they want achieve. To obtain these goals it is essential to use efficient strategies taking into account the natural way of learning ($i + 1$).

4.4.3 The rule of forgetting

In section 4.1.3 we have seen that pleasure is a great motivation that favours learning and, to develop it, we can use activities based on plays.

Unfortunately, most of the time, plays are rejected by teacher because they believe that play time is losing time with childhood and distractive activities.

Indeed play can be also this, if it is not programmed and checked but, on the other hand it may become a great tool of learning unconsciously.

For instance, to improve lexicon we can use crosswords, puzzles, naval battle or scrabble, while to develop linguistic structure we can use more complex team games in which participants have to collaborate and help each others, as for instance problem solving games.

During play time some factors are involved that characterized the pleasure, hiding the real nature of the activity. First of all it is an activity without any specific scope except to have fun. Moreover, participant are involved emotionally exploiting competitive and also cooperative spirit.

In addition, games can be used by any person of any age, even if they have to be adapted to encourage the inclination of each age.

A situation of amusement is optimal for learning because the affective filter is not activated, allowing students to live a pleasant situation in which results are just a play while what matters is to have participated with the others mates.

Krashen (1983) talks about “rule of forgetting” specifying that during games there is the building of a pleasant environment in which students forget that is a school activity and learn just playing.

Anglo-Saxon didactic tradition distinguishes plays from games: during plays the participant moves to discover the environment using sensory-motor, cognitive, social and linguistic abilities, while games are fun activities which follow specific social rules (Caon and Rutka, 2004).

Play offers the possibility of a metacognitive approach to the study, through which students research their knowledge in an autonomous, conscious and responsible way. Moreover, it helps students to 'break the ice' overcoming initial embarrassment.

However, to allow the effective didactic efficiency of plays, it is important that the activities are followed by a moment of analysis in which the students and the teacher work together taking stock of the situation: setting lexicon and all the linguistic structures used during the game, satisfying doubts and checking whether didactic goals have been achieved.

4.5 Development of linguistic skills

4.5.1 Receptive skills

Comprehension is the central ability of learning and it is based mainly on three elements:

- 1) *Knowledge of the world*: the brain subdivides into schemes the different situations in order to go straight to a limited area when it has to select an item;
- 2) *Cognitive processes*: which link the external source with the internal mechanisms according to principles of textual coherence and cohesion;
- 3) *Linguistic proficiency*: there are different levels of proficiency and each level needs specific activities to improve strategies and skills aiming at bringing the learner at the following level.

To improve receptive skills, the teacher's assessment, as LASS, is that of selecting comprehensible texts and use strategies to write up activities that may favour the development of comprehension:

- Referential questions guide the learner at searching the answer in the text;

- Inferential questions need reflections on the text favouring cognitive processes and a more detailed analysis of the text;
- Multiple choice (and true or false answers) in which there are more than one option but only one is correct. Moreover there can be a distractor that create ambiguity, and teacher can ask that students motivate their choice.

The teacher has also the duty to teach students at dealing with texts using their pre-existent abilities activating their expectancy grammar. First of all, it is important to gather clues from the paratext (title, pictures, notes, etc.) because they can help us to focalise the situation and the arguments. Then there follow three phases:

- 1) *Skimming*: a superficial and fast reading to grasp the global meaning;
- 2) *Scanning*: looking for specific information that we need;
- 3) *Focalization*: focusing the attention on requested points.

What seems evident is the sequence in which receptive skills develop, i.e. following the natural steps that involve the Gestalt mechanism of globality, analysis and synthesis.

Therefore, teaching to comprehend means favour the development of the expectancy grammar selecting morpho-syntactic and lexical materials from the ‘zone of proximal development’.

4.5.2 Production

The production can be oral or written, but in any case it follows the same procedure to develop:

- 1) *Conceptualization*: this activity is also called brainstorming and regards the first phase of writing down ideas of any type, thinking at strategies and possible approaches;
- 2) *Programming the text*: the ideas need to be sequentially organized in a schedule;
- 3) *Realization*: this phase differs for what written and oral production concern. While in written production we have time to think and modify, also picking up

in the dictionary words we do not know, in oral production it is not possible, hence it becomes important not to do long pause, learning to simplify sentences and the discourse;

- 4) *Review*: this phase is usually for the written production, even though for oral production it can be useful to recorder our production and then listen to it.

It is important to keep in mind that a written production is a complex ability which needs many efforts and a linguistic competence, hence it is a work to do with students at a good level of proficiency. For the lowest levels, a cooperative work can be useful and productive. This cooperation is made by people of a class group, that decide together schedule and writing under teacher's supervision.

A team work is important also to develop interaction skills in which each participant contribute to the realization of the meaning. The most known are tasks regarding dialogues that can be real or invented, i.e. simulated, as for instance dramatization or role plays.

There are also other important abilities, even though more complex, regarding the transformation of texts. They are:

- Summarize
- Paraphrase
- Write under dictation
- Take notes
- Translate

All these activities are linguistic skills which exploit also the cognitive and extra-linguistic abilities. It is important to develop them because they may help students during study also facilitating the acquisition of other competences.

4.6 Errors and mistakes

The time of evaluation is often seen as “the judgement day” from students’ point of view, and as a heavy work from teacher’s point of view. Indeed it is a very important moment both for student and for teachers to comprehend if the work done is well done. Students need to look at their gaps to study in deepen while teachers have to analysed the work not only individually but also in its complexity looking at the general results to verify if something needs to be resumed with more attention.

One of the precepts regarding the language teaching approach is that errors are normal. Moreover, it distinguishes errors from mistakes because mistakes are considered just something that happened due to distraction, stress, slips and so on. A teacher have to recognise them and not taking into account.

On the other hand, errors need not to be left aside. It is important to analyse if they are due to inter-linguistic factors, i.e. when the reason is due to the system we are acquiring, affected by processes that can involve also element that we have not studied yet (e.g. irregular forms of a grammar rule).

Errors can also be the cause of “false friends” those words or structures that graphically or phonetically simile to those of our mother tongue even though the meaning is different (e.g.: the English word ‘actually’ that in Italian is similar to ‘attualmente’ but means ‘in verità’).

Overcoming errors is a process that needs reflection mainly based on thinking aloud explaining the mental steps that led us to the error.

Only a careful reflection of these errors may become a useful tool allowing us to learn from them.

4.7 Final considerations

The language teaching approach bases its techniques and methodologies on some natural and biological assumptions, i.e. it follows the natural process made by the ‘human learning machine’. The language teaching becomes the art of using appropriate tools and ideas coming from anywhere, in order to create an environment with rich and always new input. In this way, learners are stimulated to maintain a continuity in their study increasing their language abilities thanks also to pleasure.

The student is the main character of the linguistic learning, it is according to his/her needs, skills and aptitudes that the teacher has to develop the program.

Moreover, the teacher has the duty to maintain a pleasant environment in which students can feel at ease, because only a situation with a relaxed context permits the intact and natural process of learning.

This approach is mainly concerned with language education rather than focusing on language learning.

Indeed, the assumption is that the linguistic development is not just a school training but a social and personal formation. Furthermore, language education is general, common to all languages that can be present in a school curriculum or learned by a person. Thus, all teachers are implicated in the same mission: develop and improve linguistic and communicative abilities enriching people not only linguistically but also culturally, and socially, promoting integration and sharing between individuals having different backgrounds.

PART THREE:

Accessible learning

Chapter 5

How to promote the Italian language learning

5.1 To make the linguistic input accessible

In this chapter I desire to describe some approaches and methodologies that deal better with hearing-impaired students. Taking into account the concepts that pass through the oral language and that are lost with hearing impairment, there are some strategies that we may adopt to give a rich linguistic input and create a school program suitable and to be characterized by many features, using not only linguistic instruments but also extra-linguistic tools, useful to enrich and make the oral language accessible.

5.1.1 Problems about deaf learners

Many studies about children with a hearing impairment have evidenced common difficulties with the oral language and with cognitive processes. In particular, hearing-impaired children have problems with reading, writing and comprehension in general. With regards to cognitive delay, they have difficulties in memorizing and being attentive, and in many cases they are unable to deal with abstract concepts. These problems need to be solved otherwise they will persist into adulthood preventing to these individuals to be fully independent, and consequently causing self-exclusion and social marginalisation.

As we have seen, the development of each deaf individual is different and depends on many factors, as for instance degree of hearing loss, age of onset and intervention, education and family background.

A deaf child, who presents from birth a profound hearing loss with no other associated disabilities, has normal cognitive skills. However, these abilities can be hindered not only by the hearing loss but also by the social and personal difficulties to communicate with the environment in which the child is growing up.

An important role is also played by parents and teachers. In particular, deaf children need specialized school staff who is familiar with the hearing-impairment and also knows how to deal with it.

In other words, these hearing-impaired children with a potentially normal cognitive system present, in most of the cases, a delay due to a limited access to the acoustic information and to an inadequate way of teaching and dealing with them.

There are deaf students that spend their school time outside the classroom and far from their schoolmates because they have motor instability and problems to remain concentrate causing disturbance to the others. Actually, this disturbed behaviour, although frequent among deaf students, it is not a common feature of this population but a consequence of feeling inappropriate due to the absence of a real communication.

Those who remains in classroom seem to comprehend, but this apparently attention is not often synonymous of good results.

Although they constantly follow speech therapy sessions, they nonetheless show low levels in comprehension and memorization. These basilar abilities cause difficulties over time, in particular with the development of abstract concepts and with personal autonomy.

In fact, even though many deaf individuals have finished their schooling, they have a poor linguistic and cultural baggage with no real competence of what life requests every day.

It seems that what is lost is the ability to understand personal and social circumstances because of a non-well formed system of symbolic-linguistic representation.

Therefore, all the concepts which pass across the language risk to be lost, such as the following abilities:

- 1) read and understand written text;
- 2) include each item in its related group (e.g. daisy > flora);
- 3) understand logical relationships as for instance opposition (e.g. high/short);
- 4) use logical categories such as negation, union and disjunction (e.g. this or that);
- 5) deal with logical implications, i.e. the consequences of an act;
- 6) identify others as persons with proper thoughts, desires and believes.

These abilities are related directly or indirectly to the language. Having problems with language means having problems to deal with these concepts causing not only inabilities to communicate and use linguistic assumptions, but also inaccessibility

to create real social and interpersonal relations without a deep awareness of himself and others.

5.1.2 Language teaching approach for hearing-impaired children

The language teaching approach is an affective-humanistic approach which considers the learner as the main figure of the learning process. Each student differs from the others as far as type of intelligence and the cognitive and learning styles are concerned (see Chapter 4). The teacher has to take into account these variables and deal with students carefully, respecting individual time and establishing tasks according to each student's needs and abilities.

If each student is different with specific rhythms and needs particular attention, a deaf pupil needs even more attention.

At the beginning it is necessary to have an interdisciplinary evaluation to identify the deaf student's features for what his/her impairment and also the different cognitive processes regard such as perception, attention, language and memory.

Only with a careful analysis of each deaf individual, teachers can create a school curriculum adapt to his/her needs with the main goal to improve cognitive abilities that are fundamental for the personal construction as people conscious of their intimate and also external reality.

If one of the main problems is attention, teachers have to stimulate motivation through pleasant and focused activities. In fact, we have seen that deaf students have difficulties to stay focused, for this reason we have to help the concentration with specific and brief activities aimed at creating a relaxed situation allowing the student to use all the time he/she needs. However, it does not means that we have to spend our time waiting for a receptive sign, we have to guide the student also in this time through pauses used to repeat instructions and verify the comprehension. It can be useful to propose the same task through different exercises, different techniques, because sometimes it is the nature of the delivery that is difficult, and not the argument in itself.

The language teaching approach follows the natural process of the human brain characterized by bimodality and directionality of the two hemispheres. Deaf students who have only hearing impairment with no other associated problems have the same need to follow the natural steps of learning. Furthermore, each argument that we want to

teach them, to be easily and efficaciously acquired, has to follow the three phases of globality, analysis and synthesis (see section 5.6).

Because of their impairment, the majority of deaf students consider the oral languages as complicated codes with apparently no meaning. The teacher's 'mission' should also be one of showing and proving that learning a language is a pleasure and not a duty, that is a manner to increase and discover new ways of thought and life. To stimulate these positive aspects may be useful to introduce also the playful methodology (see Ch. 4.4.3).

In order to allow the learning of languages it is important to promote cognitive functions through specific strategies appropriated to each deaf child.

Otherwise, the school supporter can turn into a vain job, obtaining mediocre results and creating frustration and insecurity that block the learning process instead of facilitating it.

To sum up, in deaf children's education, teachers have an important and delicate role. Moreover, they have to keep in mind some basic points:

- 1) first of all they have to look at deaf students' needs and, if necessary, put aside momentarily the school program (it is useless to teach new arguments through a language that has not been yet acquired);
- 2) language is the mean teachers use to communicate. However, if teacher and student do not have a shared language, they can exploit other types of communicative codes and also the help of extra-linguistic tools (see 5.1.5);
- 3) it is essential to set goals, but this does not mean that they will be all reached. Along the way many unexpected events can happen, and what really matters is to have a common thread, to follow and share;
- 4) never take anything for granted because, even though we know or have learned and understood something quickly, it does not mean that will be the same for everyone. Indeed, each one has his/her time to assimilate and rework things: diversity must be grasped in all its aspects as an asset and a source of inspiration;
- 5) results are not necessarily immediate, actually it is rare see them right away. Teachers have to be patient and have faith, then one day, quite by accident they

will notice that what they had taught (even long time before) has finally been understood and learned. For this reason each student needs to be endorsed and supported during the whole school curriculum.

- 6) Repetition must be a constantly used methodology. In fact, as we have seen in Chapter 4, repeating the same argument after months can be beneficial because it involves new competence, experience and also situations apparently unfathomable, which help to achieve previously failed goals.

Therefore, hearing-impaired students need to be supported by a figure who can do their linguistic facilitator, tutor, guide, and not only judge.

This figure has the task of providing the means to be able to work with the Italian language, which means that deaf students have to learn to move within the language, to recognize elements already studied, even at the cost of leave aside what is unknown to be able to understand the meaning in its complex.

It is important that, in front of a written text, they do not feel totally strangers, but rather they recognize familiar elements and, from there, they create hypotheses and make personal considerations.

5.1.3 The role of personal experience

Education in general can be subdivided mainly in three methods:

- 1) a traditional structured education guided by a teacher, in which lessons are based on transmission of his/her knowledge;
- 2) a semi-structured education in which students do practical experiences even though these experiences are guided by structured and programmed processes;
- 3) a “free” education based on progressive steps characterized by practical activities and personal experiences.

The direct and personal experience is very important to learn, in fact there is nothing that equals the impact and richness of it. Confucius (450 B.C.) said *“Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.”*

However, this experience has not to remain a merely personal experience, it must be shared with others, so we have to move from our experiences to describe them using several amounts of ways (e.g. directly such as a story-telling, with a letter or using phone, but also indirectly as for instance using social networks).

To make our experience communicable we have to select the most important things to say. Kolb²⁸ (1970) has created a cycle in which there are four phases as in the figure 5.

Figure 5

Image by Karin Kirk, via Regis University, College for professional studies²⁹

Kolb's learning cycle defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb 1984:41).

In other words, it is important to create active experience situations so the learner could be directly involved in personal perceptions and reactions. Thanks to these feelings the learner experiences reflections and observations. Then, interpretation needs to be conceptualized. In the last phase, the learner tests concepts through actions generating new experiences. This means that acquiring knowledge brings at producing new ways of thinking.

Furthermore, cognitive processes develop thanks to the thinking. Experience permits the learner's mind to create "generic coding systems that permit one to go beyond the data to new and possibly fruitful predictions" (Bruner, 1957:234).

The role of education is that of creating autonomous learners, facilitating and promoting individual thinking and the development of problem solving skills.

²⁸ Kolb David A. (born 1939) is an American educational theorist. His researches are based on the experiential learning, the individual and social change, and professional education. He is famous for the development of his Learning Style Inventory (LSI). A circled model designed to determine an individual's learning preference.

²⁹ Link to the site: <http://academic.regis.edu/ed202/subsequent/kolb2.htm>

It seems obvious that experience plays an important role in education, and it is even more important for deaf students who cannot learn through oral language but only through visual channel and direct experience. Each event has to be verbalized, i.e. conceptualized through concrete examples that will be easier understand, remember and identify than theoretical ones. In this way concepts remain always related to personal gained experience. Furthermore, we can reuse them to do associations, classification and also theoretical explanations.

5.1.4 How to use extra-linguistic tools

We have seen that the teacher's role is that of guide the student in the process of acquisition, accompanying him during the observation phase through focused tasks, preventing interferences and helping self-corrections.

In order to provide for the hearing loss and the consequent not integral linguistic input, teachers have to use all tools that are available, linguistic and also extra linguistic. For instance, even though the acoustic channel is impaired, the visual channel is intact and can be fully exploited.

The tools that exploit the visual channel are pictures, symbols and the use of colours.

In the picture deaf students can find many items that they know, even though they do not know the equivalent name for the Italian language. The majority of the times the problem is just linked to the labelling of words which have apparently no meaning. For instance, he/she has used many times 'keys' but does not know the Italian word '*chiave*' that indicates that specific object. Thanks to pictures, we can show the covert meaning of a word apparently with no meaning. Moreover, a word associated with its image favours the visual memory allowing a more efficient memorization.

In other cases we may use images in order to allow students to overcome lexical lacks, concentrating on the assignment. In fact, when they find words that cannot identify, they forget the real aim of the task (e.g. learn to use a specific verbal form) stopping on the obstacle of the labelled word with the consequence of losing the global vision. Teachers have to teach at overcome the little obstacles, if they cannot be solved, and concentrate on pre-existing knowledge making supposition with the help of the expectancy grammar.

We have seen that a common problem to many deaf children is the inability to understand that events and reality are independent from them and their thoughts. Real pictures, examples of real life, can be a way to show this aspect and moreover, they can be a way to learn different life style and habits.

Despite the great contribution of images, if they are used incorrectly we risk to obtain the opposite result. Teachers have to always make sure that pictures are understood and not equivocated. Before using them, it is important that students have fully comprehend their meaning otherwise all the following work will be useless. Indeed, it is very easy to misinterpret the meaning that we want to indicate with an image, so it is important to show each specific element giving all the possible lexicon and explaining clearly differences that often change among languages (e.g.: in Italian there is a distinction between the floors '*piano*' as ground floor, first floor and so on, and the floor '*pavimento*' as flooring composed by tiles '*piastrelle*', so in a picture that show a house the teacher has to indicate *piano*, *pavimento* and *piastrelle* as distinct elements in order to avoid misunderstandings).

Also symbols use the visual channel, their richness consists of convey meanings that everybody understand with no need of explanation with linguistic forms.

Symbols are widely used with infants in order to provide for the absence of a linguistic code. For instance in primary school each child has a symbol that identify him instead of his/her name.

In addition, symbols are more intuitive than words and for this reason they are used in contexts that need to be understood by everyone. For instance, road signs are always conveyed by icons (e.g. arrows) and we find a prevalence of symbols instead of words to signal the presence of service stations, motorways and rest areas.

Hence, symbols seem to be an alternative way of communicating. Actually, it is a code preceding our writing. In fact, before the writing corresponding to the phonetic alphabet, primitive populations used to communicate with a symbolic system made by pictograms. These drawings, each of which corresponding to an object or an action, were juxtaposed next to one another to form a narrative story. In particular, stone carvings represented the main activities regarding prehistoric life such as religious rites or the time of hunting, as shown in figure 6.

It was thanks to pictograms that, around 2500 B.C. in China, the ideographic script developed.

Figure 6

A rock drawing in Valcamonica (Verona-Italy). The incision represents a deer-hunting scene made over a time period of eight thousand years preceding the Iron Age (1st millennium B.C.)³⁰.

At the light of these assumptions it is evident the importance of symbols to fill the possible linguistic gaps that a hearing-impaired student can have. In particular, the use of mathematical symbols can be very efficient. The signs such as plus (+) and minus (-) may convey the meaning of conjunction and disjunction while the signs for equal (=) and diverse (\neq) may help the explanation of a result.

A symbol easier to understand than the equal sign is the arrow (\rightarrow). In fact, not only it links two items, but also it starts from a specific point and arrives to another conveying a meaning of conjunction with a specific relation of cause and effect.

Another important sign is the empty space (___) used to indicate that is just in this place that the student has to put the word (e.g. the right adjective, the verbal morphology, etc.). It is typically used for the exercises named 'clozes': a task for the development of receptive skills in which one word every seven is deleted.

All these symbols can be used individually but also associated with others becoming even more effective, as we can see in the following examples:

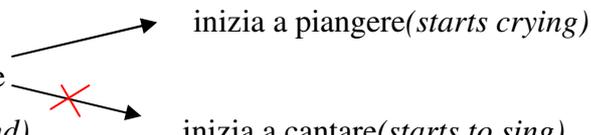
(1) Mamma + papà = genitori

Mum + dad = parents

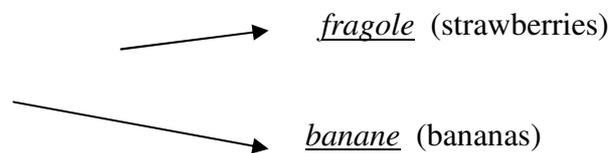
³⁰ Link to the site: <http://www.vallecamoniacultura.it/home.php>

(2) Il gatto è _____ la sedia (SOPRA/SOTTO)

The cat is _____ the chair (ON/UNDER)

(3) Il bambino cade e  *inizia a piangere (starts crying)*
(*The child falls and*) *inizia a cantare (starts to sing)*

(4)

 fragole (strawberries)
banane (bananas)

Symbols can also be constituted by a single word that assumes a sharing meaning and it is used to refer at different contexts. For instance the word ‘*capo*’ (that in Italian means head, leader, boss and also end) can be used to indicate the point from which an exercise starts but also to identify ‘year zero’ on the time line, or even more to explain the speaker of a conversation.

Another extra-linguistic tool that takes advantage of the visual channel is the use of colours. Colours have the power to enter in memory easily and unconsciously. For this reason associate them to linguistic items is a way to improve acquisition.

Students usually use different colours to underline the most important part of a text and, in addition, they sometimes circle key words. If developed, this ability may help students to study focusing their attention on the main arguments.

Moreover, colours can be used also to do association, identifying elements belonging to the same class (e.g. all definite articles are underlined in blue) and distinguishing them from other categories.

Very intuitive may also be the association of symbols and colours in the same explanation or exercise, especially if it deals with more than one argument, as in the example in figure 7, that explains the movement of the constituents to transform a sentence from the active form to the passive one.

The construction of a passive sentence from the active one consists on a reorganization of the grammatical functions (Baker 1988). In fact, the object of the active verb becomes the subject of the passive form while the subject is indicated optionally through a 'by-phrase' (in Italian it is introduced by the preposition 'da').

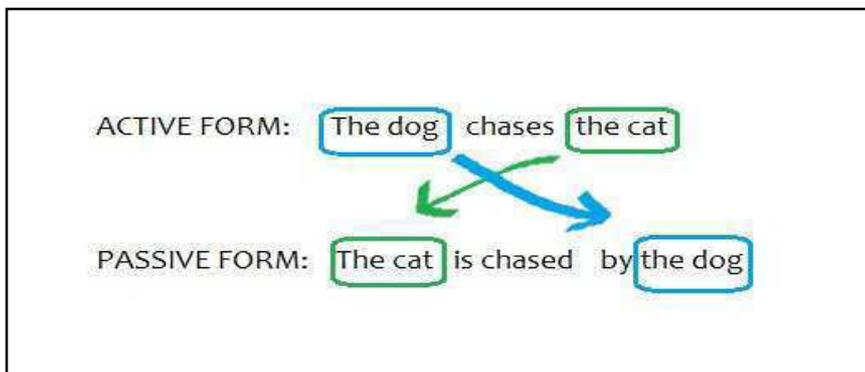
(a) The dog chased the cat

(b) The cat is chased (by the dog)

In (a) the external thematic role is assigned to the NP 'the dog'. However, in the passive construction, as in (b), this role is assigned at the passive morpheme, i.e. 'the cat' while 'the dog', that cannot receive the same role, is optionally adjunct as a PP (by the dog).

These passive constructions seem to be difficult to understand and produce also among normal-hearing children because the verbal morphology changes from the active form and also the way to express the passive sentence (see Guasti 2007).

Figure 7



Therefore, images, symbols and colours are extra-linguistic tools useful to help in comprehension, facilitate memorization and provide for linguistic gaps. Moreover, they use the intact visual channel with no negative consequences due to the hearing impairment.

5.1.5 The written language

The written language plays an important role in the learning process. First of all, we must consider that, in the education of children with normal hearing, written language is taught at school, i.e. when children are six years old and know the oral language almost equal to the adult native speakers. It means that the oral code is already solid, and the learning of the written form is based on pre-existing linguistic knowledge.

For deaf children it is not always in this way. Indeed, in most cases, hearing-impaired children arrive at school with poor and confused knowledge of the oral language, and the learning of the written code is not the development of an additional ability, like for their peers.

Hence, deaf children are sometimes instructed to use a code that does not convey any meaning for them.

Despite this condition, the written language can be a great contribution, if used with the right attention, because it uses a visual channel and offers segmented words instead of the voiced continuum as in the spoken language.

Moreover, the exposure to the written code is solid and permanent, leaving the reader all the time he/she needs, instead of the oral one, receding and often covered by extra-linguistic noise.

However, the written language also presents some limitations: it is an artificial code, structured and with specific rules that affects the order of a sentence and general discussion.

On the contrary, the oral language is redundant and abundant of elements often superfluous. It is characterized by speaker's spontaneity, because, even though the oral discussion has been prepared, there is always the possibility to change both the arguments and the order in which they are exposed.

This richness of flexibility and variability is more rigid in a written text.

What is important to underline is that teachers should not take anything for granted, i.e. there is the need of a constant and real feedback between teachers and students. In fact, during the learning path, misunderstandings are common and frequent, and if these problems are not early solved, there are negative consequences also with other arguments, forcing the teacher to explain again what he/she believed already assimilated.

To prevent this situation, it is necessarily for the teachers to not be satisfied with just a mere nod from the student, they have to research a real ‘litmus paper’ with focused and valid tasks.

5.1.6 Further considerations

When oral words do not reach deaf children, the teacher has to replace this with a focused and personalized program in order to favour an accessible learning process.

As we have seen, the attention to many factors may contribute to an efficient work program. First of all giving the right space to hearing-impaired students to experience the oral language according to his/her rhythms and specific needs, helping in this discovery through the employment of all possible linguistic and extra-linguistic tools.

Learning a language should be an enjoyable process of discovery. For this reason, it should not be heavy but pleasant, also enriched with playful methodology (see Chapter 4) and using much strategies are possible.

The pleasure of learning has to be researched in motivation, the engine of learning. Playful methodology aims at creating new activities in order to directly and actively involve students. In addition to play, there are also other elements that can favour the pleasure to discover and stimulate learning the language, for instance through a song that students love or a famous film. To know what their main interests are it is sufficient asking them, directly involving them in the acquisition process.

Hence, pleasure needs to be developed in order to lighten the weight of duty and the sense of imposition given by school, that often cause negative effects.

We decide to use various techniques but it is important not to use only one method. When we create specific activities for specific arguments, not based on efficacy or best results, it is important to try out the same argument with different methods and at different moments in time.

Repetition, even though it appears boring and worthless, it is not time wasted. It is part of the methodology: repeat the same argument several times, with different activities and exercises, allows students to strengthen the knowledge already in their memory and reinforce those that are not yet completely understood.

Moreover, using more than one strategy for the same argument allows students to face a possible problem at observing them from different points of view. Therefore, if

a technique has not been successful, another one could explain the argument much better and clarify any doubts left out by the first.

Gardner (1987) explained that an efficient method is one that uses different techniques to teach the same thing. Only with the combination of different strategies we create a neural network containing similar information, so that the same information can be applied in different contexts.

Therefore, it is evident that a teacher should not get tired of repeating, to resume work already done, because it is the best method to enable effective and robust learning.

5.2 From theory to practice

In the follow paragraphs we will see some strategies that teacher may use to make the Italian language accessible to deaf children, based on the exploitation of their abilities and providing specific techniques aimed at making up to the deficit which prevents the normal learning of the spoken language. In particular, we will see how to deal with linguistic items which are more difficult for this population, i.e. the acquisition of lexicon, verbal morphology and complex structures.

5.2.1 Strategies to make the acquisition of lexical elements easier

To learn lexicon is not an easy process and, to help an efficient memorization, i.e. to store it in our semantic memory in order to use it when necessary, it is important use the natural potentiality of our brain.

Therefore, it is important to know that the human mind memorizes information according to two modalities:

- 1) Storage for semantic fields (animals, clothes, parts of the body, etc.);
- 2) Storage for complete systems (fast/slow, fat/thin, tall/short, etc.).

This means that, when we introduce new lexicon to our students (not only the deaf ones), we have to give all the lexicon regarding the same category, to allow the learning of the whole semantic field, or by using a word we also have to give the word which has the opposite meaning.

The traditional list of words, with no correlation or a shared context, risk being inefficient, demotivated and often a real waste of time.

For the acquisition of lexicon, it is very important to associate words with images, in fact, this union allows us to rely on our visual memory, favouring memorization.

Moreover, a picture can contain more than an image or than an object describing a semantic field (as in figure 8) contributing to exploit not only visual memory but also the natural processes of acquisition.

Figure 8

Illustration³¹ is related to a table set in which each element is signalled by a number that can report the respective term in a list below, or, as task, words must be inserted by students.

When we talk about lexical words we think about nouns, the variable part of the discussion that can be semantically subdivided in:

- Proper and common
- Concrete and abstract
- Individual and collective
- Countable and uncountable

Each category is intrinsically present in the lexical word and, whether we know the semantic meaning, it is easy to link the noun with its corresponding class.

Therefore, the teacher's role is not that of teaching the features regarding a noun (e.g. 'gregge' *flock* is a collective and countable name) but to help the students to learn the semantic meaning in order to understand automatically at the intrinsic properties (e.g. 'gregge' is used to describe a group of sheep).

³¹ Picture downloaded from: <http://www.impariamoitaliano.com>

A problem may derive by abstract nouns because we have no picture to show them. However, their frequent use, in familiar and differentiated contexts where they appear repetitively, may allow their indirect acquisition. With abstract nouns it is important to provide students every possible synonymous in order to create a network of terms that can be regrouped and successfully learned.

Lexical elements are often associated also with adjectives, in particular qualitative adjectives that provide information about the quality of someone or something.

In other words, they do not appear alone but perceive or follow the noun they describe. For this reason, the associate learning of a noun and an adjective is a great way to make easier to acquire all the lexicon, as in figure 9.

Figure 9

An exercise about nouns of animals and qualitative adjectives. Following the example, students have to link the image with the corresponding adjective (hare-fast; turtle-slow) and then make two sentences (the hare is fast; the turtle is slow).

5.2.2 Strategies to make the acquisition of functional elements easier

With regards to functional words, the acquisition requests a lot of effort because pictures often are not used. This absence of overt and intuitive meaning affects the comprehension and the difficult consequent to memorize the information.

Therefore, words need to be inserted in a simple and familiar context to facilitate the comprehension, because only if the functional item is understood it will be memorized.

Linguistic studies (see Chapter 3) suggest that the functional elements that are most difficult to understand for deaf people are articles and clitics. Moreover, in production hearing-impaired individuals tend to omit articles, in post-verbal position, while clitics are substituted with the full NP.

With regards to articles, there is not a particular distinction between definite and indefinite for what concern omission, the inability to deal with both forms arrives from the Italian language property of subdivide nouns according to two gender categories: masculine and feminine. A feature that, for instance, does not exist in the English language.

This genders distinction is a difficult concept sometime confused with the sexual human genders. In fact, there is not a real reason why ‘pizza’ is feminine and needs the feminine article ‘la’, while ‘pane’ is masculine and needs the masculine article ‘il’. This intrinsic and non-instinctive property often creates problems among deaf children. The two categories need to be learn with a guided learning discovering each noun and what gender it belongs to. Normal-hearing children, hearing ‘la pizza’ and ‘il pane’, or also irregular forms as ‘la mano’, learn to use gender classification with little effort; on the other hand, hearing-impaired children, who are not early exposed to the oral language, lose the direct access to these types of classifications.

I desire to report a personal experience that has shocked me: last year, while I was teaching the Italian language to a deaf girl and we were dealing with articles, she asked me “why you say ‘la pizza’ using only feminine gender? Pizza is eaten also by boys!”.

In that moment I understood that nothing must be considered easy, what we learn through mere experience after birth is lost for hearing-impaired children, causing a shortage of all those intrinsic meanings that in normal acquisition do not need to be explained.

The teacher's job is to create occasions for his/her students to discover all those features that the hearing impairment has obstructed, using many different examples through activities included in several familiar contexts.

It is important, when we introduce new lexicon, we also add the article corresponding to the lexical word, in this way deaf children can see their use and little by little learn how and when to produce them.

5.2.3 Strategies to make the acquisition of verbal phrase easier

Italian verbs present an apparently regular structure, however there are many phenomenon of allomorphs that affect verbal morphology, such as formal variations among tenses (e.g. *cado, caddi; scrivo, scrissi; etc.*), lexical polymorphs (e.g. *andare, vado*) and moreover, morphemes are often more than one for verbs (e.g. *dorm-iv-ano*).

Therefore, the acquisition of Italian verbs is a complex and not easy procedure that needs time and the right help through guided contexts.

Another important aspect to keep in mind is the variety of input used with deaf students, because baby-talk or a foreign-talk, characterized by a massive simplification for what regards the use of verbs, are often used.

Indeed, when people talk with a foreigner or a hearing-impaired individual, they tend to simplify their speech with the intention to make communication easier (e.g.: using present tense instead of past participle, or the infinitive form instead of more complex tenses), however they deprived the interlocutor of experiencing the lexical richness of that language.

Therefore, with regards to verbs, teachers have the duty to give a rich input, that means to simplify without reducing, using for instance evidence, experience, examples and direct explanations (for instance drawing a time line to indicate the point corresponding to a specific use of verbal tense).

In addition to verbal morphemes, there are also other particular uses of some verbs that seem to be difficult to understand by hearing-impaired students, bringing omission or inappropriate use in production.

For instance, Chesi (2006) indicates that the copulative verb is often omitted, and the reason is its apparently absence of meaning and utility. In the Italian language the main copulative verb is the verb 'essere' *to be*, (the others are 'restare'

remain, ‘apparire’ *appear*, ‘sembrare’ *seem*, ‘riuscire’ *succeed*, ‘diventare’ *become* and ‘tornare’ *return*).

A verb is defined ‘copula’ when it is linked to a noun or to an adjective, i.e. a DP. Its task is to unite the subject with the nominal part of the sentence. To explain this particular meaning of the verb we can present the verb as a chain made by two rings, one that contains the subject and the other adjective, while the copulative verb permits the union. An example is shown in the sentence in figure 10:

Figure 10

As we have seen, the strategy to use colours and symbols to explain grammar arguments is a method that involves a visual memory capturing attention and allowing an efficient brain storage.

Moreover, the use of schemes and images can also be a great help to introduce auxiliaries which, according to Chesi, are another problematic issue.

In Italian there are two verbs used as auxiliary: ‘essere’ *to be* and ‘avere’ *to have*. This means that these two verbs can appear autonomously as tense, or perceive another verb forming a composed verb and for this reason called auxiliaries.

There is not a grammar rule that gives each verb its auxiliary, however there are some generalizations: all the reflexive and impersonal verbs (except for weather verbs) use the auxiliary ‘essere’ while ‘avere’ is requested with transitive verbs.

It seems there are no specific rules with regards to intransitive verbs, they need to be studied individually.

To learn them, teacher can subdivided them into semantic categories and propose summarized models to the students in order to make them easier to memorize, as shown in figure 11:

Figure 11

Therefore, to make these strategies really effective the method is always the same: work with semantic fields or complete systems using extra-linguistic tools that exploit visual channel and help memorization and comprehension.

5.2.4 Strategies to make the acquisition of complex structures easier

We have seen in chapter 3 that many studies have indicated complex sentences as the structures most difficult for hearing-impaired individuals.

In particular several authors have investigated sentences in which the order of constituents is changed from the canonical one: Subject > Verb > Object.

This word order changes because a syntactic movement is involved to built sentences such as relatives clauses, passives clauses and Wh-questions.

All these types of complex structures, apart from their complexity, are often involved during storytelling and for this reason, children deal with them continuously, learning to use them intrinsically and accidentally.

Even though most of the time deaf children are not exposed to novels and fairy tales (we will see the importance of doing it in the next paragraph) it can become a method to teach them these structures, using easy and pleasant stories full of lexicon and pictures.

It is possible also create single sentences linked to a picture, however they do not have the same accessibility that storytelling can have in which there is a sharing context and a situation of confidences that goes beyond the school task.

Deaf child can relax and forget the school situation, he/she is immersed in the narration with the help of images to facilitate comprehension. Only at the end of the story the teacher can test the receptive skills and evaluate quantity and quality of comprehension. After this step, the child can be repurposed pieces of the story and shown different pictures, he/she then has to choose the right one.

Another strategy, that has to be used however when student has better language skills, is through explicit explanation. Starting from the sentence with the canonical words order, the teacher explains to the student how and where constituents have to be moved to create the derived structure. This method do not need intrinsic methodology and the development of intuition and personal analysis; however mental processes and visual memory can be stimulated using symbols and colours during explanation, as in the following example.

Figure 12

Here it is possible to see an example of how explicitly explain the movement being done to producing derived sentences (a restrictive subject relative clause and a restrictive object relative clause).

A great contribution about relative clauses, both for what regard comprehension, productions and strategies comes from the studies made by Volpato and Adani (2009) and Volpato (2012), who have investigated these complex structures indicating that

their difficulty is due to the inability to deal with constituents derived by *Wh*-movement, (as we have seen in Chapter 3).

Whatever type of strategy we decide to adopt, it is important to adapt it in order to make it suitable for the student. We should not be afraid to change exercises and activities, they have to be an instrument for our work, modifiable according to situation and exigencies. The teacher has to develop the ability of modify materials to create instruments that can make arguments accessible to each student without making him feel inappropriate or incapable. If we create a situation in which the student feels at ease and knows that he/she can do it, then he/she will do even better than what we expected.

5.3 The contribution of books and fairy tales

Deaf students need more attention than other students, especially where the acquisition of oral language acquisition is concerned. It is essential to work on the language to create competences and reinforce pre-existent knowledge.

Increase and enrich the linguistic input is often synonymous with simplify. This term is used here with a non-negative connotation, i.e. simplify does not mean impoverish, but to repropose the different elements subdividing them in order to create a clear and logical subsequence that allows a more accessible and deducible comprehension.

When we talk about the need to enrich the input, we do not refer only to increase the program with specific paths and activities. We aim also at make more different sources available to deaf learners, in particular all the texts that literature offers us.

Literature is a very important instrument to improve linguistic experience, and this is widely used with normal-hearing children. For this reason, it has to be exploited even more with hearing-impaired children.

The benefits that children gain from listening to adults who read aloud for them is not only linguistic but also cognitive. It stimulates a sense of protection and pleasure of sharing feelings and emotions. The mere action of reading aloud contains many values related to communicative and affective patterns that positively influence the emotional and cognitive development of the child.

Furthermore, the quality of these experiences affect language positively improving receptive skills and facilitating the academic success.

In fact, by reading, children acquire their mother tongue enriching vocabulary and structures of language, allowing also to create personal mental structures to understand relationships and distances in space and time.

This process is called *emergent literacy* and it is also characterized by the development and improvement of writing skills and phonological competence.

However, it differs among children because of several factors such as innate abilities, quality of listened language, desire of learning and self-esteem.

It is evident that all the texts we have, in particular fairy tales and fiction for children in general, contain a great amount of linguistic richness that can be developed before starting school.

With regards to hearing-impaired children the access to reading is obviously more difficult; the deficit prevents the integral listening and the complete discrimination of phonemes, but this does not mean that literature is not for deaf children.

There is, however, the need to have some sagacity; for instance, it is important to know the temporal dimension that a child requires is different from that of an adult; time is more dilated because child needs more time to comprehend situation and to try out new actions and experiences, and he/she needs time to trust others.

Parents and educators have to learn to let the children have all the time they need, valuing the observation time and offering some variations to help new discovers.

Moreover, they can supply linguistic tools to help the deaf child in order to make easier the access to reading with focus on their attention through questions and observations. In this way, deaf child can understand autonomously what is read increasing the desire of persist in the task.

Teachers and parents can simplify texts in a sort of "visual storytelling in words" through different strategies as for instance:

- Lighten written texts inserting, when there are words with low frequency of use, their corresponding sign;
- Work on the quality and frequency of images to facilitate memorization of words;
- Introduce every chapter of the novel with some anticipations. We know the importance of activating the expectancy grammar to facilitate and improve comprehension;

- Offer good reductions of the Italian classic novels, important cultural heritage of our country.

Therefore, books can become real allies for the deaf children, ways of escape or a real home, as much as for normal-hearing children or even more because, in part, they can replace the experience of the oral language. Indeed, reading becomes a linguistic stimulation that compensates the exposure limits set by the impoverished input, allowing the transformation of reading into a wonderful experience of independence and discovery.

Despite these considerations, books can also become inaccessible because they require constant attention. The risk that reading becomes an “enemy” is high and for this reason many further researches should be done in order to investigate which techniques could be adopted to make reading enjoyable and interesting to deaf children.

Further researches should study how to choose the most effective and suitable tales, textual typologies and pictures, and also how to use all those elements that can help the text to become more attractive and pleasant.

We have seen how very important personal experience is, hence we should create interactive books in which images and words are associated with other elements, such as insertions made by particular materials or tools that facilitate the comprehension and help children to realize the meaning of a word (for instance in a tale that describes different types of textile we can insert little pieces of wool, cotton and so on, that children can touch and associate to the word).

Experience can also develop through the interaction of sign language or theatrical representations. A performance like these can lead children to become fond of reading.

In addition to the language, there are many other abilities that develop through reading, for instance the concept of time, pictures and sequences of cause and effect, concepts of relationships, moral values, creation of mental hypothesis and structures, and abstract concepts of textual coherence and cohesion. All these theoretical constructs are often difficult to acquire by deaf people, hence we should create conditions in which these abilities can be developed early.

A recent contribution comes from Mason Perkins Deafness Fund³² that has reflected on literature and how it can be adapted to children and deaf adults, both from the linguistic point of view and from the point of view of culture. The foundation has created “Tino and Nella, the strange couple”, an illustrated book for children that combines words and pictures in Italian, English, Italian Sign Language (LIS) and American Sign Language (ASL). The goal of this work is that to create literary material for deaf children but also a teaching tool for educational figures, families and people who desire to get closer to language and the deaf culture.

5.4 The contribution of the Italian Sign Language

As we have seen in chapter 2, knowing a sign language is a great richness for deaf people because allows them the access to a language through the intact visual channel, naturally and independently. Moreover, having a solid knowledge of the sign language is a source from which to draw during the learning of other languages, also the oral ones, in fact the learning of a second language is done by systems that refer to the native language through processes of linguistic reflection, for this reason learning aL2 is possible if you have a mother tongue, anL1.

Sign language is not only important for deaf people but also for teachers who educate them. In other words, if a teacher knows the sign language he/she can use it as a tool to favour oral language acquisition.

Even though it has already been assimilated that sign language has no negative consequences for the learning of oral languages, the possibility that it can contribute to it is often rejected.

Instead we have to think at the real scope of the language, i.e. language is not the communication but just a way to communicate, the instrument through that we communicate. Therefore, if there are situations in which we are not able to communicate with deaf students through the oral language, we have to use other instruments, linguistic and extra-linguistic, as we have seen, and this means that other types of linguistic codes can be used too.

³² Mason Perkins Deafness Found was born in 1985 to promote the welfare, training and development of deaf children. The main goal is to build a positive and stimulating environment focusing the attention on the potentialities of the deaf child rather than on the auditory deficit.

Sign language seems to be useful when we have to deal with utterance that uses contextual information, because it employs space to develop deixis³³ favouring associations that are difficult to understand.

For instance, the explanation of personal pronouns or demonstratives, functional elements difficult for deaf people, can be dealt with through signs. In LIS, the space in front of the signer acquires a grammatical function, employing specific configurations and directions. In particular, for what concerns personal pronouns, the first person is made pointing towards the signers, the second person towards the interlocutor with the addition of gaze direction, while the third person is made pointing toward a point in the space without adding gaze direction.

Bertone (2009) aims that what characterize pointing as deictic expression are two specific features (as in table 1):

- 1) Distal that describes the distance among signer and the personal pronoun
- 2) Proximal that describes the proximity among signer and the personal pronoun

³³ According to Salvi e Vanelli (2004; p. 321): “deixis is a linguistic phenomenon for which certain expressions in a specific language require, to be interpreted, the knowledge of particular contextual coordinates and their placement spatiotemporal at the moment of communicative act”.

Table 1

Explanation of spatial features according to Bertone (2009; p.85)

	PLACE OF ARTICULATION	MEANING
[+Prox]	Defined space in front of the signer.	qui, questo, adesso, io*,mio** (here, this, now, I, my)
[-Prox]	Defined space between the signer and interlocutor	Lì, vicino a te, codesto, domani, futuro, tu*, tuo** (there, near you, Tomorrow, future, you, yours)
[+ Dist]	Defined space far from the signer and the interlocutor, marked also by gaze direction that does not coincide with the direction from the signer to the interlocutor	lì-quello, tempo storico, egli*, suo** (there-that, historical time, he/she, his/her)
[- Dist]	Indefinite space	dove?, ovunque, sempre, mai, qualcuno (where?, everywhere, always, never, everyone)
*they need the adjunction of personal features specified by pointing toward the signer ** possession is specified by manual configurations and orientation that differ from the other signs		

In other words, personal pronouns have the follow features:

- 1st person singular and plural [+ proximal; - distal]
- 2nd person singular and plural [+ proximal; + distal]
- 3rd person singular and plural [- proximal; + distal]

Therefore, to explain personal pronouns and other similar arguments, we can use deictic expressions and show proximity or distance through the direction of pointing and gaze.

Deictic expressions are present also in the Italian language, however their use in LIS is more wide and enriched of different elements (for instance there is also the use of number incorporation to say ‘noi due’, ‘voi tre’, etc.).

This is just an example, but LIS can be used as support in other many contexts by teachers who want give at their student real input enriched by all what is possible, as we have said previously.

In fact, the teacher's work is that to compare the two languages in order to understand what is easy and accessible for hearing-impaired children, discovering what can be omitted and what has to be underlined for respecting quality and the true message.

Furthermore, we have seen the importance of offering the LIS when deaf children are little, in order to respect the normal stages of language development, and then let them be free to choose whether to continue to use it or not, instead of doing opposite, namely to propose it as a last resort when learning the oral language failed causing suffering, isolation and misunderstanding.

5.5 Lifelong learning

In this paper the main attention has been paid to the deaf children even though the same strategies can be used also for adolescents and adults.

Because of a method that develops early to prevent linguistic delay the focalization is on the children, i.e. make the linguistic input accessible to allow the same oral language acquisition as the normal-hearing peers.

When we deal with adolescents and adults, even though they have more competence in the oral language, they present some delays (see Chapter 3) that can be overcome with rehabilitative techniques. Although strategies are similar, there is a greater use of explicit explanations, while with children it is preferred an implicit learning that takes advantage of intuitive mechanisms and the game discovery.

Adults feel the need to learn, they want to know the causes and reasons of every issue, and they need to do logical connections to improve acquisition. For this reason, with them, strategies have to be modified, developing tasks in which mental processes are involved and incentivized with the help of logical and abstruse activities.

Although techniques that involve intrinsic processes have not for them the same amount of success the children have, the use of a playful method and the sense of competition can be involved to make more dynamic and interactive their learning process, often characterized by poor collaboration and support among classmates.

Other aspects affect language learning in adulthood, in fact, as we have seen, the acquisition of the mother tongue is possible until the critical period, i.e. at around 15 years of age.

Despite this assumption, many studies³⁴ have evidenced that language learning can increase and improve lifelong. The authors support the idea that, with increasing age, also motivation and the increase of metalinguistic awareness, becoming positive and powerful factors to influence the learning process.

Therefore, it is necessary to create situations and spaces for deaf adults, in which it is offered to them the possibility to continue the study of language afterschool age, and also the possibility of learning other foreign languages.

5.6 How to built a learning unit

In this last paragraph I desire to give some guidelines to develop a learning unit according to the language teaching approach but looking at deaf learners needs.

Learning units are a brief path which deals with two or three linked arguments at the most, and it is designed to develop in no more than a few lessons. Then, learning units with the same common denominator are united in a didactic unit (see Chapter 4), as bricks put together to form a single building.

Each learning unit, although linked to the others to form a didactic unit, it is complete in itself in order to develop and satisfy prefixed goals.

Moreover, a learning unit is structured according to the natural sequences of globality, analysis and synthesis to allow a normal acquisition of all the topics we deal with. Arguments are programmed according to the theory of *i+1* (see in Chapter 4) proposing stimulating and enjoyable exercises, and treating it from many different point of view using several techniques and activities.

Looking in detail, the first step that composes a learning unit is based on stimulating the right hemisphere characterized on globality and intuition.

A text is proposed but, before listening and reading it, global mechanisms are involved through visual and experiential activities based on looking at paratext and images to try at understand what text will tell us.

Then, tasks of listening, reading and repeating the text help students at verify their hypothesis and fill lacked information.

Indeed, the lesson starts with a text that in normal situations (i.e. for normal-hearing students) is listened more times and only later it is read and repeated. This is not always possible with hearing-impaired students, i.e. the teacher cannot always rely on

³⁴ Bertone and Volpato (2012); Bertone, Cardinaletti, Grosselle and Volpato (2011).

student's residual hearing or at his/her CI. For this reason it is important, at the beginning of each deaf student's school program, to write up their specific profile in order that teacher can know their limits and also respect parents' choice of educational approach, creating specific and accessible activities.

This means that, if we have to deal with deaf children with no CI and a low hearing residual, we cannot built a unit that starts from listening activities. We have to focus on exercises that exploit visual and cognitive abilities that compensate the hearing loss, however leading student to a stimulating intuition and mechanisms that involve globality and the right hemisphere.

The second step is characterized by a deeper analysis in which brain spontaneously creates connections and focuses the argument identified before. There are two types of analysis:

- 1) Functional, in which activities focus on communicative acts (how they write/say/use something)
- 2) Grammatical, in which activities focus on grammar aspects and rules

These activities can be of many different types and involve several instruments.

The last step involve the guided and rationalized synthesis on what has been learned. This step requests more work by teacher who has to guide student's reflection helping him with schemes, summaries and explicit explanation if it needs.

There is also the possibility of integrating the learning unit with readings and pictures coming from the place in which the language we are studying is spoken, developing knowledge not only linguistic but also regarding culture and habits. Culture cannot be taught but it can be shown through many different channels, teasing student's curiosity and interesting.

In the appendix it is possible to see an example of a learning unit studied for deaf children who have a competence of the Italian language corresponding to A1, the lowest level according to the European Framework.

5.7 Final considerations

In this chapter we have seen the importance to adapt school materials in order to allow deaf students an accessible learning path.

First of all, it is important to have a clear idea of each student's background and situation in order to write up a detailed profile and an accurate school program.

The program has to concentrate its attention on the student and his/her needs, facilitating the oral language learning offering an enriched linguistic input, personally and directly experienced by the deaf learner.

Many studies have evidenced an impoverishment of the external input due to the hearing impairment and the consequent incomplete exposure at it. For this reason teachers have to develop strategies that allow an accessible school path through the use of linguistic and extra-linguistic tools to compensate and improve the quality and quantity of the linguistic input.

To make this possible, it is not sufficient only to modify school program by using specific strategies. There must be a willingness on the part of teachers of really want to know about hearing impairment and its consequences. Only an accurate attention to hearing-impaired students and to their disability can allow teachers to understand that the hearing loss is a surmountable obstacle without burdening childhood and the right to education that every child has.

Moreover, it is shown how much the Italian Sign Language may help both students and teachers during the language learning because it increase the development of linguistic skills and employs the intact visual channel. Another great contribution is given by literature, in fact the early introduction of deaf children to the listening and vision experience of stories read for them, accompanied by a large amount of images, helps the development and improvement not only of linguistic skills but also of cognitive processes.

In most cases it is sufficient to look at the problem from a different point of view, to find out that the best solution is to make things easier and to use tools that are near to us, things that we never could have thought to be useful.

Conclusions

The present work has the aim to contribute to the development of innovative methodologies for the teaching of Italian language to hearing-impaired individuals.

In particular, it tried to provide some guidelines in order to create accessible learning strategies, taking into account the results of most recent studies about children with hearing impairment.

These studies have evidenced that hearing-impaired children have common difficulties with oral language and with cognitive processes due to an impoverished exposure to the linguistic input. In fact, they present in most cases a delay due to a limited access to the acoustic information and to an inadequate way of teaching and dealing with them although they have a potentially normal cognitive system.

Learning a language should be an enjoyable process of discovery and, for this reason, new accessible school paths have to be developed aimed to compensate and improve the quality and quantity of the input through the use of linguistic and extra-linguistic tools.

This linguistic path has to be different from that of normal-hearing children who study Italian language at school but have already acquired its oral form. In fact, deaf children do not often have the same competence as their hearing peers and this prevents them the same way of learning at school. Therefore, teachers have to teach Italian language almost like a foreign language, accompanying students throughout the whole learning path and paying more attention to those processes that they have not developed due to the lack of an early exposure to oral language.

A great contribution comes from the language teaching approach. It bases its methodology on the theory that learning, to be effective, has to follow the natural processes of human brain. These processes are characterized by three phases: globality, analysis and synthesis. Deaf students, who only suffer from hearing loss with no other associated disabilities, have the need to follow these natural steps in order to favour learning.

Despite these assumptions, we have seen how many differences there can be among deaf people. For this reason, at the beginning, an interdisciplinary evaluation it is necessary to identify each deaf student's features as for his/her hearing impairment, and

also his/her different cognitive skills such as perception, attention, language and memory.

The teacher has to take into account these variables and deal carefully with students, respecting individual time and developing tasks according to each student's needs and aptitudes.

Only with an accurate analysis of each deaf individual, teachers can create a school curriculum adapt to his/her needs. The main goal has to be that of improving their cognitive abilities, fundamental for the personal construction as persons who are conscious of their intimate and also external reality.

Thus, the program has to focus its attention on the student and his/her needs, making the oral language learning easier and offering an enriched linguistic input, personally and directly experienced by the deaf pupil.

Moreover, teachers have to learn to adapt the linguistic input, and this also means to know how to simplify it without reducing or impoverishing it. Therefore, it is necessary develop a more detailed and careful program for deaf students, without precluding the empirical richness of an integral and normal linguistic input.

To conclude, it is evident the importance of adapting school materials to deaf students' need in order to allow them an accessible learning path using different tools that exploit the visual channel, such as:

- Symbols;
- Colours;
- Images;
- Schemes;
- Playful methodology;
- Italian Sign Language;
- Written language;
- Books and fairy tales.

However, to make this possible, it is not sufficient only to modify school program by using specific strategies. Teachers have to be really willing to want to know what hearing impairment is and its consequences. Only an accurate attention to hearing-

impaired students and to their disability can allow teachers to understand that hearing loss is a surmountable obstacle and that it cannot preclude the access to a normal education and to a happy childhood.

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<http://www.biap.org/en/biaps-articles/>

<http://www.ens.it>

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<http://www.isa-audiology.org/Default.asp>

<http://www.natiperleggere.it>

<http://www.storiadeisordi.it>

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APPENDIX A

Example of didactic unit for deaf children with a 'A1-level' in Italian language according to the Common European Framework.

In viaggio

→ Leggi cosa scrive Chiara nella sua cartolina

→ Metti una 'x' sulla risposta giusta

1. Dove è andata in vacanza Chiara?
 - A Vicenza
 - A Roma
 - A Parigi
 - A suo fratello Carlo
2. Che mezzo di trasporto ha usato?
 - Il treno
 - L'aereo
 - L'auto
3. A chi ha scritto la cartolina?
 - Ai suoi genitori Aldo e Franca
 - Alla sua amica Cristina
4. Che tempo fa a Roma?
 - Piove
 - Fa caldo
 - Fa freddo
5. In che periodo dell'anno Chiara è andata in vacanza?
 - In estate
 - In inverno
 - In autunno

I MEZZI PER VIAGGIARE

→ Collega il mezzo con l'immagine corrispondente.

1) Treno

2) Aereo

3) Moto

4) Camper

5) Autobus

6) Nave

→ In quale di questi mezzi sei salito?
Metti una 😊 vicino all'immagine se
ti è piaciuto oppure una ☹️ se non ti
è piaciuto.

❖ SECONDA PARTE: ANALISI

IL PASSATO PROSSIMO



→ *Sono arrivata a Roma*

→ *Il viaggio è stato lunghissimo*

→ *Abbiamo visitato i musei vaticani*

verbo **ESSERE**

oppure

AVERE



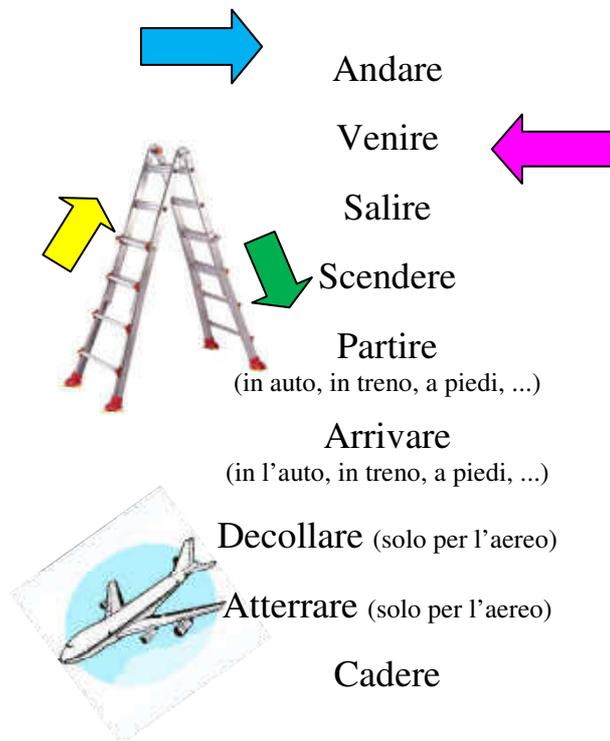
verbo al

PARTICIPIO PASSATO

(*arrivata / stato / visitato / ...*)



**I verbi che si "muovono" vogliono
l'ausiliare essere**



**→Scegli il verbo giusto per ogni frase
(guarda lo schema sopra per aiutarti)**

❖ TERZA PARTE: SINTESI

INVENTIAMO!

Immagina di essere in vacanza e scrivi una cartolina ad un tuo amico!

QUI SCRIVI DATA E LUOGO



QUI INCOLLIAMO IL FRANCOBOLLO



QUI RACCONTA LA TUA VACANZA!!!

-dove sei andato e con chi

-con quale mezzo (auto, treno, aereo,...)

QUI METTI:

NOME e COGNOME

INDIRIZZO (via, città, provincia e paese)



-per quanto tempo (un fine settimana, due settimane,..)

-cosa hai visto

-cosa ti è piaciuto di più

Cultura: la città di Roma



→ Conosci la città di Roma? Collega i luoghi che ha visitato Chiara con l'immagine giusta

1) Piazza di Spagna

È una delle più famose piazze di Roma grazie alla scalinata di 135 gradini che fu inaugurata da papa Benedetto XIII nel 1725. Al centro della piazza si trova la famosa fontana della Barcaccia scolpita dal Bernini.

2) Musei Vaticani

I Musei Vaticani, che occupano gran parte del vasto cortile del Belvedere all'interno dello Stato della Città del Vaticano, sono una delle raccolte d'arte più grandi del mondo.

3) Colosseo

È il più grande anfiteatro del mondo e il più importante monumento della Roma antica costruito nel 70 d.C. Si trova nel centro della città di Roma e può contenere fino a 50.000 spettatori.

4) Fori Romani

Chiamato dagli antichi romani *Forum Magnum*, costituiva il centro commerciale, religioso e politico della città di Roma. Alcuni dei monumenti ancora visibili oggi ci sono il Tempio di Vespasiano, l'arco di Settimio Severo e il Tempio di Saturno.

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