

112 - ENGINE DEVELOPMENT AND PROCUREMENT OF SIGN LANGUAGE: A SEARCH FOR RELATIONSHIPS

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INTRODUCTION

More than a phylogenetic characteristic, communication among men is a necessity of the specie in search for establishment of interpersonal, social, work relationships and any other kind. Communication is carried on through the languages that have special characteristics and identity features of the group they belong to and enables the interaction among agents in the communicative process. This process often becomes incomplete due to lack of essential conditions for its establishment and this is called disability.

Deafness is an invisible disability physically, because it presents no apparent lesions in the human body and is only noticed when the speaker tries to communicate and is not matched by oral language. The lack of communication conditions through the conventional way leaves the hearing impaired discriminated in society and in the teaching-learning process.

Scientific studies provided an understanding on the construction of communication among the hearing impaired, even setting up a language with features and group identity, with a gap of paramount importance, which is the gesture since they have no mastery of the sound used in oral languages.

This article aims to analyze the process of acquisition of sign language, identify the difficulties experienced by young people in the process of acquisition of sign language, and to characterize the relationship between acquisition of sign language and motor development for the expression of hand and facial gestures in the establishment of communication among deaf

The importance of this study for the society ratifies the deepening of the theme creating a bridge between hearing impairment and motor development in the expansion of social inclusion perspective, because it will contribute to improving the quality of life for people with hearing disabilities and providing important elements for the formulation of local public policies for people with hearing impairments.

By defining the ways of this exploratory research, an experimental type, it was established universe of this research, two classes of students from the Federal Technological Institute from Teresina, and as subjects, thirteen students of the Free Course, males and females aged 18 to 32 years in the non-probabilistic sampling. Gil (1999) so that the criterion for selection of survey participants answered the availability to collaborate with the work. The data collection instrument used was a semi-structured interview.

The subjects were divided into two groups: Group I, composed of people who had no previous physical monitoring before the learning of sign language and the Group II, composed of participants with a program of manual exercises and facial expression.

1 Human development, learning and hearing disabilities: a brief history

In recent centuries, the literature in the fields of psychology and pedagogy presents studies and ideas based on research conducted in the last three decades that explain human development as a result of interaction among the evidence provided by genetics, the influence of other people who form social groups of which the human being is part and the environment itself, as well as the behaviors themselves.

Human development encompasses three broad areas that explain a person's behavior: the cognitive, affective and social and motor. The cognitive domain includes mental operations such as discovery, recognition, retention and generation of information, decision making and preparation of trials. In the affective and social domain are present feelings and emotions. In motor control, movements start in the integration of other fields since the entire movement has influences of the three domains.

All these areas are used and integrated into the establishment of human communication, whether through the spoken, written and tactile language and are expressed through behaviors more or less complex. Human behaviors are a network of general communication, so that human beings developed a system of language composed of sounds, gestures and other codes which complement in the establishment of this communication

In any system of human communication, the movement is present in various forms and. In the case of hearing it is essential because, deprived of producing sounds the deaf have as alternative the gesture representation for the substitution of the oral language and the reproduction of the meaning of writer signs.

Development processes are mediated by learning that drives them allowing the individual to modify the environment where they live and establish interactions with other individuals, creating new levels of development and changing behaviors throughout life (Vygotsky, 1977).

According to Piaget (1973) the child's speech develops through a process of identification with the speaker from normal biological devices that enable children to say the sounds, murmurs and noises transmitted and understood as elements of speech.

For Telford et al (1988, p. 539 and 540), children with hearing disabilities need the same environment as other children to develop learning and understanding of speech, but they have to be added to special situations that reinforce the significance of sounds almost imperceptible to visual elements, because in the general aspects hearing impaired have to learn skills normally.

According to Vygotsky (1977), quoted by Lacey (2006, p.165) language is acquired through socialization with other individuals, and it makes them different from other animals.

Language is acquired in social life and is one that the subject constitutes as such, with their human characteristics, differing from other animals. It is in contact with the language, integrating a society that uses it, that the subject acquires it. For deaf people, this oral contact reveals as injured because oral language is perceived through the ear canal that is changed in these people. (Lacerda, 2006 p. 165)

Language is the vehicle through which the individual communicates. However there are other forms of

communication. In the case of deaf there is communication through gestures made by the hands and facial expressions is the sign language.

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The specific literature on hearing impaired characterizes this type as partial or total loss of waste hearing. To Loureiro and Mourão Santos, (2002, p.14)

the hearing impaired is considered in this way to be found total or partial loss of hearing residues by congenital or acquired diseases, making it hard to understand speech through this organ (ear).

In discussing the types of hearing loss, Loureiro and Mourão Santos. (2002, p.14) states that it can manifest as:

- Mild / moderate deafness, is one in which the hearing loss is 70 decibels, which makes it difficult, but doesn't prevent the individual to express themselves orally as well as to understand the human voice with or without the use of a hearing aid
- Severe / profound deafness: the hearing loss above 70 decibels, which prevents the individual to understand, with or without hearing aid, the human voice, and naturally acquire the oral language

2 The deaf and the language

Over the centuries, people with impaired hearing, faced many hardships in search of affirmation of their identity, to gain the respect and the social and cultural recognition as well as producing a language that provides their communication needs with the peer group and others in society.

Antiquity was marked by a religious perspective in all areas of human development and all idiosyncrasies were attributed to supernatural phenomena and sacred determinations. In this context, the deafness was considered reason to purge and punishment of the gods to man.

Deaf people were thrown overboard from the top of the rocks, by Spartans or sacrificed to the gods by the Teutates gods by Gauls. They were considered incompetent by the Greeks. According to Aristotle they were not able to reason because of lack of language, This concept made up of disseminating the dispensability of deaf education and marginalization of those who came to be sentenced to death along with the mentally disabled and patients without recovery. In 360 BC, Socrates declared that it was acceptable for the deaf communicate with hands and body (Wikipedia, 2009).

The deaf were worshiped, feared and respected by the population as gods and served as mediators between them and the Pharaohs until the Middle Ages, in Egypt. They were been signed, historically, for the first time in Hebrew law (Wikipedia, 2009).

Influenced by the Greeks, the Romans would forgo treatment similar to the deaf. On the other side, it was St. Augustine who admitted the communication capacity of this community through gestures, in equivalence to speech, although he considered deafness as plan of God to cleanse the parents of the deaf.

In 700 AD, John Beverley taught the deaf to speak and he was considered the first educator of the deaf. In the late Middle Ages and early Renaissance, the overcoming of reason over religion and the enhancement of scientific thought have enabled the advancement of medicine and a different perception of deafness (Wikipedia, 2009).

The Modern Age focused the distinctive landmark between deafness and dumbness, deleting the term deaf-mute. The foundation of the first school for Deaf in Madrid by Pedro Ponce de León, allowed the first manual alphabet. Assisted by Juan Pablo Bonet, Ponce de Leon expanded studies about deaf and created conditions for student researches about teaching for deaf, using the oral method and prohibiting the use of sign language. This conviction was shared with Konrah Amman, defender of lip reading, who inspired in the belief that the speech was a gift from God and the condition to prove of human nature. He did not use sign language for believe that this procedure stunted the human mind (Wikipedia, 2009).

The following period was marked by the performance of the English doctor Bulwer who advocated the belief that sign language should be an emphasis on education for deaf and therefore developed a method for communication among deaf that based on gestures, and he has published several books about the subject.

Another strength in respect the human condition of deaf was posted by John Wallis who tried to teach several deaf to speak and ended up leaving this activity to devote to teaching of writing.

France has some contributions by creating the National Institute for Deaf and Dumb in Paris, which was the first school for the Deaf in the world, adopting the method of collective education and recognition of the futility of teaching the deaf to speak over the use of sign language. (LANE, 1984).

The orality of the deaf has been held, from the beginnings to the present, by people who believe to be the best for the deaf using any spoken language to communicate with each other. Samuel Heinicke was a great defender of the orality, with a record of teaching speech to deaf, creation and definition of the method known as Oral (Wikipedia, 2009).

The study of Sign Language and the discussion on which is justified as more appropriate language to the deaf could not leave out a parallel between the Portuguese and Libras.

The Portuguese language is oral-auditory in nature, because it uses sounds produced and articulated in the vocal tract and perceived by the ear, while the Brazilian Sign Language is a visual-gestural language that uses communication as gestural movements, facial expressions and body language that are perceived by vision (Parana, 2009, p. 3).

To Coutinho (2000), the deaf have developed a communication system to create sign language. It is a natural language, which arose from contact with other deaf people and brought several components idiomatic, in the form of signals, to convey the thoughts of the speakers. It is important to say that the deaf are considered speakers by use any form of oral tongue or flagged to communicate with each other.

Sign languages are not universal, so each country builds its based on the social-cultural and linguistic diversity of its people. The Brazilian Sign Language was developed from French Sign Language. It has its own grammatical structure and its signals are formed by combining shapes and hand movements and points of reference in the body or space.

According to existing legislation, the Libras is a linguistic system of conveying ideas and facts, from communities of people with hearing deaf in Brazil, where there is a form of communication and expression, visual-motor nature, with its own grammatical structure.

Law No. 10,436, enacted and signed into law on April 24, 2002, recognizes the Libras along with other features of speech associated with it, as a legal means of communication and expression in the linguistic system of visual and motor nature constitutes a linguistic system of visual and motor nature with grammatical structure itself, constitutes a linguistic system of conveying ideas and facts, from communities of deaf people in Brazil.

Article 4 provides:

The educational federal system and state, municipal and Distrito Federal's system should ensure the inclusion in training courses in Special Education, Speech Therapy and Teaching, in their secondary and higher levels of education of the Brazilian sign Language, as part of the National Curriculum - PCNs, according to current law.

The Libras is based on the Portuguese language and as such it presents grammatical, lexical and linguistic characteristics as occurs in relation to regional differences. Thus, it is said that sign language has complex requirements that seek the cultural evolution of their users, the reasons and ways to change and growth of their uses and functions.

The teaching for the deaf, adopted in Brazil, recommends learning sign language - Libras, initiated by use of the Libras alphabet, represented by signs and gestures of the hands, followed the teaching of oral and written language, so that one complete the cycle of bilingualism.

Thus, the bilingual linguistic and cultural design struggles for the deaf has the right to purchase / learn the Libras and this helps not only in the second language acquisition (major), but allowing their integration in society, because when a deaf acquires a structured language he can create ideas and opportunities, actively participating in living in their midst (DIZEU and Caporali, 2005. p.591).

3 A study about motor development and learning of sign language

The learning of spoken languages relies on speech while the sign language uses gestures mainly manual and facial ones. In this context, motor development is the vehicle of interaction in the relations among linguistic elements that enable communication of hearing impaired.

In the language of hearing impaired the body, facial and manual movement acquires a fundamental importance in establishing communication, guarantying refinement of expression in the dynamics of communication among emotional, perceptual, cultural and linguistic factors as pragmatic (communicative uses), semantic (word and meaning), grammatical (syntactic and morphological rules). The only system not used by the hearing impaired is the characteristic of the phonological system of oral language.

Hand movements and facial gestures are central to communicative competence in understanding the messages and concept formation of sign language, just as the sounds are essential for the expression of oral language.

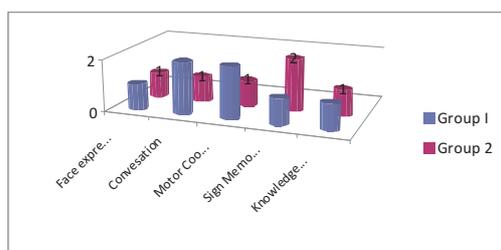
To Burti (2005), all difficulties of movement can be overcome through a design of physical exercises that promotes quality of life and social integration of people. This project will contain primarily stretching exercises and relaxation of muscles involved in making the gestures and movements, which speeds and enhances the expression of them.

The field research that originated this article had as main aim, to show the relationships between coordination of hand movements and facial ones of Libras' users, the reason why great importance was attached to the difficulties faced and expressed in the survey by people who need or wish to acquire sign language.

To establish more objectivity in the communicative relations investigated, we chose to work with two groups of people, whose differential consisted of the profile for the formation of groups. The group I was composed of people who were not part of a program of manual exercises developed before and during learning of Libras. The group II had this preparation, so that they could establish a comparative study. Both groups evaluated, in particular item of the interview, the importance of using the exercise program for the expressiveness of the sign language.

About the general difficulties faced in learning of the Libras we obtained the following result:

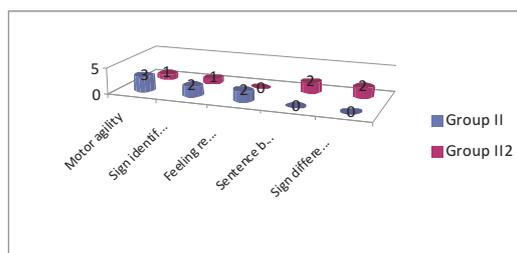
Graph 01: The greater difficulties in the use of Libras



By comparing the aspects of motor coordination, it was observed that the group had no motor intervention pointed as the main cause the difficulty in developing the hand movements in the expression of sign language.

We tried to specify the difficulties related to the movements of the hands and once again we got a proving result of the condition of importance and necessity to combine the motor preparation to the learning of Libras, which registered the following results:

Graph 2 :Motor difficulties



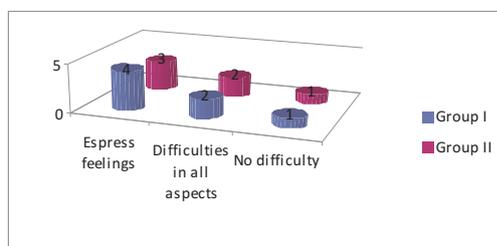
Speed required for construction and expression of the sentences was the more pointed difficulty and relates not only to its content engine but also to cultural and semantics expression of the language that has different attributes of a oral language

and therefore needs a lot of symbolism to offset some of the elements we have in our spoken language and has no syntactic or symbolic substitutes of forms of expression in the sign language.

Regarding the difficulty in identifying signals, the subjects of the search showed a variety of signs that the same word or expression as well as a similarity among some signs that hinder interpretation.

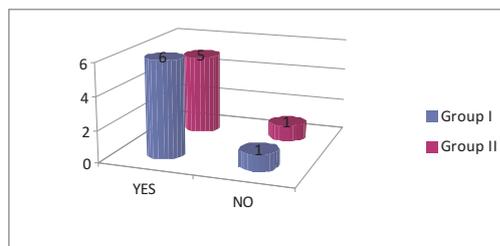
About facial expression, the subjects investigated showed the expression of feelings as the greatest difficulty in Sign Language - Libras. According to one respondent, "the deaf speaks to the body and the face.. It is necessary much training for he doesn't stay artificial" (interviewee 06) and "we are not accustomed to this type of representation, because in oral language the use of gesture doesn't have this level of requirement to make the meaning of the phrase" (Interviewee 02). And the results of research on this aspect are well represented in graphic:

Graph 3: Difficulties in the use of face expression in the communication



The speech of one of the subjects of research shows that "one of the greatest difficulties in the use of sign language is the incorporation of the characters" (Interviewee 03) and "the representation of the characters through movement to express a sad, and happy face etc requires much of a communicator, because messes with the mood of the people" (Interviewee 01).

However, the full recognition of this situation was expressed in the final question of the search when we obtained the following result:



that shows a percentage of almost unanimity in recognizing that the use of motor exercises enables a better performance of the movements used in the expression of Libras' signs and minimization of the hands pain that are not very present in the speech of people who value communication difficulties through sign language.

During the search, one respondent declared, that "[...] in relation to the hands, the pains disappear, as it uses the exercises learned from the teacher of Physical Education" (Interviewee 05).

CONCLUDING REFLECTIONS

This research has fulfilled the main function of scientific research in education, as regards the provision of data for the reframing of the teaching practice conducted together the hearing impaired.

The analysis and reflections made during the research contributed to a reassessment of the training process of teachers working with these people, confirming the indispensability of the creation of public policies in order to prepare society with a paradigm of education that is equal for all without exception of culture, race, age, language, gender or disability.

The inclusion of the study of Brazilian Sign Language - Libras in the curricula of schools and universities, especially in undergraduate courses, already constitutes a real requirement. In emergency, it was concluded the need for training of teachers with preparation in the psychomotor area, use of a mirror in the classroom, work manual gym or similar activity to secure improvement of the performance of hand's movements of Libras' users.

The importance of conducting this research was also due to fact that it opened a vein of scientific knowledge in the relationship between movement and use of sign language, the essence of this work, opening new possibilities for enhancing this theme.

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ENGINE DEVELOPMENT AND PROCUREMENT OF SIGN LANGUAGE: A SEARCH FOR RELATIONSHIPS

ABSTRACT

Communication between humans is a necessity and phylogenetic brand stores information that linguistic, cultural and social group. The research examined the difficulties in acquiring language from the comparative study with two groups of learners LIBRAS Federal Institute of Piauí, difficult to identify and characterize the relationship between language acquisition and motor development in the expression of gestural communication between users of LIBRAS. The sample consisted of 13 subjects in experimental research, and as a means of collecting data on a semi-structured. The study found the need to implement public policies that include public, through integration of the discipline LIBRAS in school and university curricula, development of exercise program to improve hand motor coordination of language users.

KEYWORDS: LIBRAS, motor development and communication

MOTEUR DEVELOPPEMENT ET L'ACQUISITION DU LANGAGE DES SIGNES: UNE RECHERCHE DE RELATIONS

RÉSUMÉ

La communication entre les êtres humains est une nécessité et phylogénétique marque qui garde les informations linguistique, culturelle et sociale de ce groupe. La recherche a analysé les difficultés dans l'acquisition du langage à partir d'une étude comparative avec deux groupes d'apprenants de Livres de l'Institut Fédéral de Piauí, pour identifier les difficultés et de caractériser les relations entre l'acquisition du langage et le développement moteur de l'expression de la communication gestuelle entre les utilisateurs de Livres. L'échantillon comprenait 13 sujets dans la recherche expérimentale, avec l'instrument de collecte de données à l'entrevue semi-structurée. L'étude a révélé la nécessité de mettre en œuvre les politiques d'inclusion de ce public, grâce à l'intégration de la discipline Livres dans les programmes scolaires et universitaires, le développement de programme d'exercices physiques manuels pour améliorer la coordination motrice des utilisateurs de la langue.

MOTS-CLÉS: Livres, développement moteur et communication.

DESARROLLO MOTOR Y LA ADQUISICIÓN DE LA LENGUA DE SEÑALES: LA BÚSQUEDA DE RELACIONES.

RESUMEN

La comunicación entre los seres humanos es una necesidad y marca filogenética que guarda informaciones lingüísticas, culturales y sociales del grupo. Esta investigación analizó las dificultades en la adquisición de la lengua a partir de un estudio comparativo con dos grupos de estudiantes de Libras del Instituto Federal de Piauí, identificando dificultades y caracterizando relaciones entre la adquisición de la lengua y el desarrollo motor en la expresión gestual de la comunicación entre los usuarios de Libras. La muestra fue constituida por 13 sujetos, en investigación experimental, teniendo como instrumento en la recolección de datos la entrevista semiestructurada. El estudio constató la necesidad de implementar políticas públicas de inclusión de este público, mediante la inserción de la disciplina de Libras en los currículos escolares y universitarios, así como el desarrollo de programas de ejercicios físicos manuales para mejorar la coordinación motoras de los usuarios de esta lengua de comunicación.

PALABRAS CLAVE: Libras, desarrollo motor y comunicación.

DESENVOLVIMENTO MOTOR E AQUISIÇÃO DA LÍNGUA DE SINAIS: a busca de relações

RESUMO

A comunicação entre os seres humanos é uma necessidade e marca filogenética que guarda informações lingüísticas, culturais e sociais do grupo. A pesquisa analisou as dificuldades na aquisição da língua a partir do estudo comparativo com dois grupos de aprendentes de Libras do Instituto Federal do Piauí, para identificar dificuldades e caracterizar relações entre aquisição da língua e o desenvolvimento motor na expressão gestual da comunicação entre os usuários de Libras. A amostra constituiu-se de 13 sujeitos, em pesquisa experimental, tendo como instrumento de coleta de dados a entrevista semi-estruturada. O estudo constatou a necessidade de implementação de políticas públicas de inclusão desse público, através de inserção da disciplina Libras nos currículos escolares e universitários, desenvolvimento de programa de exercícios físicos manuais para melhorar a coordenação motora dos usuários da língua.

PALAVRAS-CHAVE: Libras, desenvolvimento motor e comunicação.