

The creative and scientific thinking of the teenager and young adult deaf person

Vera Lúcia de Souza e Lima¹

Centro Federal de Educação Tecnológica de Minas Gerais.

veralima@civil.cefetmg.br

Abstract

This work has the aim to talk about the issues that affect the access of young deaf people into the scientific thinking and how such issues relate to the lack of terminological lexicon of the Brazilian Sign Language (Libras). Likewise, this work refers to the lack of terminological bilingual publications in Libras and Brazilian Portuguese either in scientific, technological and cultural areas. The onus of the comprehension of scientific concepts in secondary and high school has been a concern of teachers, sign language interpreters and of the deaf student himself. In the ambit of the secondary school, Marinho (2007) and Carvalho and Marinho (2010) have registered the lack of terminological lexicon in Libras in the area of sciences. In the ambit of the technological and vocational education, De Souza e Lima and Leite (2010) have discussed the issue of the lack of terminological lexicon in Libras since the creation of signs in the area of the architectural drawing. It is important to note that the possibility of going to higher academic levels is much wanted by young deaf people, by their families and by the secondary schools that have been making efforts to minimize this discontinuity in the trajectory of young deaf people coming from the secondary school. Thus these projects were innovative once they highlighted an area yet unfocused though important being the inclusion of deaf students into scientific projects and into the scientific and creative thinking.

¹ Doutoranda pela Faculdade de Letras da Universidade Federal de Minas Gerais.

Introduction

A science only begins to exist or can be imposed as far as it brings into existence and imposes its concepts through their denomination. [...] To designate, i.e., to create a concept is at the same time, the first and last operation of a science. (BENVENISTE, 1989, p. 252)

The central theme of this conference "Science Communication for Social Inclusion and Political Engagement" agrees with our research, because we are observing and interacting with the user of the Brazilian Sign Language: the deaf student, since 2008. The aim is to build bilingual terminological dictionaries in order to achieve a scientific and a professional education of these individuals. This research is to address the issues affecting access of deaf young people to the scientific thought.

We believe that these issues are related to the scarcity of the terminological lexicon in Brazilian Sign Language – Libras and the lack of bilingual terminology publications in Libras and Brazilian Portuguese, in the scientific, technological and cultural areas. The burden of understanding scientific concepts in high school and college, has been a concern of teachers, sign language interpreters, but the main burden falls on deaf student himself. One of the main objectives of this research is to encourage scientific vocation in deaf students, which is justified by the fact that the terminology construction needs the contribution of the speaker of the language.

This work was only possible because in 2004 the agreement established between the CEFET-MG and Maurício Murgel State School, so students of this school could be oriented in Scientific Initiation, by teachers of CEFET-MG. Hence, was created the BIC JR Program, in CEFET-MG, granted by FAPEMIG (Fundação de Amparo à Pesquisa de Minas Gerais – Foundation for Research Support of Minas Gerais).

The Scientific Initiation Junior Scholarship (BIC-Jr) is a type of grant for high school or technician students. The scholarship is granted, preferably, to students from public schools, in which they aim researching and use of scientific methods. They are guided by researchers with master or doctorate degrees. Until 2008, no deaf student in high school or undergraduate had received scholarship. The deaf student is subject to a

very shallow professionalization, because he also lacks proficiency in Portuguese. Thus, the idea is to professionalize the deaf student beyond limitation.

When we started the research in 2008, our fellowship students were enrolled in the Maurício Murgel State School. This school, since 1998, was characterized as an inclusive school. At the time, Maurício Murgel State School, had 114 deaf students, 17 blind students and one deaf-blind student. In 2009, the school assisted to 72 deaf students, two students with moderate hearing loss, seven blind students, one student with deaf-blindness, two deaf students with low vision, and one student with low vision. In 2010, there were 77 deaf students, five students with moderate hearing loss, six blind students, two deaf students with low vision, one deaf-blind student and one handicapped student, included in regular education.

Now, in Brazil, there are about 10 million people with hearing loss (IBGE Census, 2010), of which only 12.26% attend or attended schools. From this universe it is even smaller the number of deafs that have attended to Special Schools (0.71%), which have the best supply of teaching tools. These deaf students do not have any intellectual restriction to assimilate or produce knowledge. Nonetheless, they are underemployed (or even unemployed), mostly by a language barrier. As soon the technical terms are created, it will be possible for them build knowledge. Therefore, this deaf student will participate actively in social dynamics, not only as a resident in a particular region, but as a producer of ideas, worker, consumer, etc. Thus, this article describes our interest about the main impediment to the entry of most of deaf young students, to vocational and technical or higher courses: the linguistic issues.

Methodology

It is never enough to make explicit that the topic of lexical production is part of a complex system, interwoven with strong social, cultural and theoretical issues. The methodology we choose includes forms of approach this theme in its various aspects. It is noteworthy that, according to Kilian et al (2012, p. 278):

rarely terminographics products are created from the profile and needs of learners in a specialty area, in a given communicative situation, ie, to an audience consisting of those who are still in a period of technical or academic training.

To understand, then, in theory and in practice, the educational context of the deaf student, it was necessary to bring him to the condition of fellow undergraduate. Initially, were implanted two research projects, in the BIC JR modality, which started in 2008. It is worth noting that, through this initiative, for the first time high school students became scientific research fellowship students, which transformed the research environment in space of constant discovery and construction. The methodology used is being improved and developed as part of the doctoral thesis, in progress, by De Souza Lima (2013). This methodology is an attempt to identify, to act and to interact with language barriers that affect the lives of deaf individuals in society. This methodology can be considered a technology, and aims to create terms in the Brazilian Sign Language (Libras).

The methodology consisted of Qualitative Research, including procedures of Participative Research, in which the target audience – deaf people – was the object of research, and a researcher. In this process, the deaf people were the protagonists among the team members, regarding the creation of signals and identification of terminological solutions.

The Pedagogy of Projects, as proposed by Barbosa and Moura (2006), chosen to permeate the development of these projects, is justified because it was necessary to analyze each data or new fact, which emerged as result of the research process. The use of the Pedagogy of Projects allowed comprehension and solution of problems, as they presented themselves, from this analysis.

Discussion

The first project, "Construction of a Technical Glossary for Adequacy of Instrumental Language in Libras for Teaching Architectural Drawing," hereinafter "Glossary", had the goal to understand and to find the need of creating terms in the architectural drawing area, seeking their incorporation to the lexical in the Brazilian Sign Language [Libras].

The second project "Preparation of a Manual Applied to Construction for the Teaching of Architectural Design to Deaf Students" aimed the building of a bilingual manual, enabling this audience reading and representing of architectural designs. But this manual would only be accessible to the deaf when we had the translation and definition of terms developed in the "Glossary" project.

These projects allowed us to form a team composed of a supervisor (proponent of the project), an expert from the area to be developed, a deaf fellowship student and a sign language interpreter, to create the terminology. The projects showed us that the deaf education is between, at least, two complex linguistic issues.

First, the deaf student would need to have access to an academic collection (scientific, artistic, technological, and cultural) that is only available in Portuguese language, or any other language, or any oral-auditory modality, in which he has no expertise. In Brazil, the methods of teaching Portuguese language to the deaf are still hardly known and unexperienced. Secondly, the Brazilian Sign Language (Libras) official since April 24 of 2002, consists of a scarce lexicon. For example, the dictionary of general language in Libras has approximately 10,000 entries, while a Portuguese language dictionary has over 250,000 entries. The Libras, therefore, with such a sparse lexicon, has few academic texts and no terminological dictionary to date.

The unprecedented presence of the deaf fellowship student in the research environment and in the professional education context, will lead, in the future, to a definition of the sociolinguistic universe, which is establishing. Far from other social situations in which deaf people are situated, the academic research environment we propose has the definite objective of promoting terminological lexical production of sign language, in this case Libras. According to the consensus, 90% of deaf people are born into families of listeners, where he is often the only deaf, living with people who do not express themselves in Libras. In this condition of linguistic minority, the deaf often is subject to a late acquisition of both, Libras and Portuguese language.

Conclusion

CEFET-MG, in its "Institutional Development Plan (IDP): institutional policy (2011-2015)" express its commitment to the inseparability of teaching, research and extension. With the development and results of the project "Construction of a Technical Glossary for Adequacy of Instrumental Language in Libras, for Teaching Architectural Design" we realized that the education of the young deaf should happen not just in teaching but in the integration of teaching, research and extension, mainly, in linguistic research. The participation of a deaf student aims to make feasible the process of creating words and production of bilingual terminology dictionaries. Thus, research has promoted

the role of these individuals. The presence of these individuals in the research is fundamental, because the participation of the speaker of the language is essential, and because the lexical terminographic linguistic production requires its own cultural environment.

We understand with Krieger (2001, p. 226) that the lexicographical making is composed respectively of complex products and activities.

It is not limited, therefore, neither to a list of words or terms with some information considered relevant, nor even to an activity that only requires mastery of a technique for data collection established a priori. On the contrary all this achievement requires an intense research activity that cannot be realized without principles and defined methods, since the text — terminographic or lexicographic — must reach a competent qualitative dimension to match the confidence that the user tends to place in works of reference. (KRIEGER, 2001, p. 226).

Begging with the methodology of creating terms in Libras it is possible to provide for the deaf individual, training courses that help him reach the academic world and the employment market. That is why creating terminology facilitates the assimilation of concepts by the deaf, causing him to develop new skills and expand his intellectual competence. The objective is to create an excellent educational material (textbooks and glossaries in a number of areas where is identified a terminological shortage) accompanying the courses and providing to the deaf, an education without barriers. For example, in 2008, we thought to offer a training course in Architectural Design for deaf youth who were enrolled in high school, and thus provide them with a professionalization skill far beyond the operational level, to which they are almost automatically destined.

The first idea was to create an educational material, specific for this audience, which would be subsequently translated into Libras. However, when we tried to perform the translation, we found that the terms of the Architectural Drawing area does not exist in the dictionary available, not even existing terminology dictionaries in Libras or in any area of knowledge. It became necessary, then, to create a research project for the development of a terminology glossary in the Architectural Design area.

With 300 created terms, then the "Pilot Architectural Drawing Course for the Deaf" was structured, in 2010, with 22 selected deaf students. These were enrolled students from public inclusive school, attending first, second and third year of high school. The "Pilot Architectural Drawing Course for the Deaf" was performed with the total workload of 240 hours, distributed as follows: 80 hours of Architectural Drawing; 40 hours of AutoCAD; 20 hours of conceptualization in Portuguese; 20 hours of Instrumental Libras, so that the students could learn the new terminology signals; 20 hours of math, focused on content of descriptive geometry; 20 hours of basic computing; 20 hours of technology of constructions; 20 hours of interpersonal relationships applied to labor relations.

Two out 22 students entered the employment market and worked in the projects area of a construction company, and eight other students enrolled in technical and higher education. It can be argued that this process and the product, as well as to encourage the involvement of the young deaf, shed light on an even gray area: the scientific and creative thinking of the young deaf.

One of the most relevant conclusions of all this research process is the consolidation of the methodology. Currently, two projects of terminological research are implementing in CEFET-MG: "Bilingual Glossary of Technical Terms of the Electronic Area" and "Bilingual Glossary of Technical Terms of the Chemistry Area". The Glossary of Electronics relates to the effectiveness of the methodology. Since 2010, one deaf fellowship student is attending the Electronics Subsequent Technical course. He is using research methodology in the classroom when he needs to understand the concepts of the numerous unfamiliar terms in the area of electronics. The Glossary of Chemistry has a deaf fellowship student, from the Mauricio Murgel State School. This brings us to the first projects with the advantage that, today, we are aware of the process both from the linguistic point of view as from the point of view of the specific discipline.

All terms have to undergo at least two instances of validation: the linguistic area and the specific area of knowledge in which the terms are being create. One of the advantages of the methodology already tried out is its credibility within the educational institutions to ensure the participation of departments at validation of the specific area. As for the linguistic validation of terms, is a process that begins with the presence of a

linguist from the lexicography and deaf terminology fields, and an interpreter. Then it goes through several other instances such as: applying in a course composed of deaf participants with the presence of representatives of the deaf community, understanding that deaf interpreter has to record the signal and the definition on video. After the dictionary is ready and in use it is still possible to test the final product efficacy in a whole population.

Referencias bibliográficas

ALUÍSIO, S.M.; ALMEIDA, G.M.B (2006). O que é e como se constrói um corpus? Lições aprendidas na compilação de vários corpora para pesquisa linguística. *Calidoscópio*, v. 4 (3), p. 155-177, set/dez.

BARBOSA, E. F e MOURA D. G (2007). *Trabalhando com Projetos: planejamento e gestão de projetos educacionais*. Belo Horizonte: Ed. Vozes.

DE SOUZA E LIMA, Vera Lúcia. *Língua de Sinais: Proposta Terminológica para a Área de Desenho Arquitetônico*. Projeto de Tese do doutorado em curso no POSLIN/FALE/UFMG. 2014.

DE SOUZA E LIMA, Vera Lúcia e LEITE, R. C. G. *Contribuindo com o Currículo da Educação Profissional de Surdos: entre o Visuo-Espacial da Língua LIBRAS e a Linguagem Visuo-Espacial da Arquitetura*. 2010. No **II SENEPT-2010 - Seminário Nacional de Educação Profissional e Tecnológica**.

BRASIL. Decreto Nº 5.626, de 22 de dezembro de 2005. Regulamenta a Lei no 10.436, de 24 de abril de 2002, que dispõe sobre a Língua Brasileira de Sinais - Libras, e o art. 18 da Lei no 10.098, de 19 de dezembro de 2000 http://www.planalto.gov.br/ccivil_03/_ato2004-2006/2005/decreto/d5626.htm . Acesso em 03 de abril de 2014.

KILIAN1, Cristiane Krause. BOCORNY. Ana Eliza Pereira; VILLAVICENCIO, Aline ; WILKENS, Rodrigo. *Crerios de Seleção de Termos Utilizados na Construção de um*

Glossário Pedagógicos Online Baseado em Corpus Especializado. Revista Entrelinhas – Vol. 6, n. 1 (jul/dez. 2012)

KRIEGER, Maria da Graça. (2001). A Interface Semiótica/Terminológica no Dicionário Jurídico-Ambiental Termisul. In: Ciências do Léxico, Lexicologia Lexicografia, terminologia. 2ª edição. Campo Grande: Editora UFMS.

CEFET-MG (2012). Plano de Desenvolvimento Institucional – PDI: política institucional: 2011-2015. / Centro Federal de Educação Tecnológica de Minas Gerais - CEFET-MG; organizadores: Maria Rita Neto Sales Oliveira, Anadel Aparecida Baptistella, Ramon Augusto Ferrão. – Belo Horizonte: CEFET-MG, 2012. –119 p. Inclui referência. ISBN: 978-85-99872-19-2