Technology, the Indigenous and the Revitalization of Languages at Risk of Extinction

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ABSTRACT

This paper aims to analyze the use of technology in indigenous environments as an instrument to preserve their culture and language. We also aimed here to display results of a first version of a cataloguing system we have been developing to store words from the Xacriabá language. We think that the availability linguistic data in any digital format may induce or support the cultural revival of indigenous peoples.

Keywords: system, indigenous, cataloguing, languages.

1. INTRODUCTION

New technologies and the Internet have triggered changes in several portions of society, even in the indigenous environment. Among these changes there is a new way of looking at the use of information technology (IT), now with greater transparency and paramount importance for the transmission and preservation of human knowledge. Among the many abstract representation forms of a society, the language of a group represents the main portion of genuine knowledge that is responsible for the cultural stability of generations. Globalization changed the world, also changing the vision and the forms of interaction of indigenous peoples in relation to technologies, allowing them to access new forms of information and increasing social interactions, but in the meantime their culture and language is being forgotten. So, for the maintenance and preservation of cultural remains of indigenous communities' electronic devices may provide efficiency and quality for storing and collecting data. "The disappearance of these languages would be a great loss to indigenous communities, as they are the traditional means of transmission of culture and thought and an important part of ethnic identity" [1]. Currently, the issue of availability and sharing of information is of great value as means of access and proliferation are diverse, such as computers, tablets, smartphones and more.

Moore; Galucio and Gabas Júnior [1] point out that due to the concern about endangered languages new documentation methods have been developed. They are focused on the recording of language samples, scanning and annotation of the recordings and their use for language revitalization. These recordings and notes should be stored in digital form permanently. Documentation may be a solution for the preservation of a culture, not only historically, but for reproduction within communities and the consequent increase in affection with the language.

2. LANGUAGE DOCUMENTATION

In our introduction we pointed out that language documentation may be an important starting point to cultural revival of indigenous groups that struggle between modernity and tradition. This is a possible but very ambitious outcome since human interaction and its results don't go hand in hand in all attempts. So, even if after making use of our system there is no cultural revival of the Xacriabá culture, there is still much to be studied and learned by the documentation of their language. If we consider the scope of collecting linguistic data by using technology there are definitely important contributions for science, specially linguistics and anthropology. Klessa (2016) points four reasons on why to document endangered languages. According to her, languages should be documented for: preserving human heritage; keeping memory of important facts for local communities; illustrating linguistic theories; studying language contact. So, language preservation can be used as a scientific tool but also as a way to not let cultures and knowledge being lost.

It is important to highlight that endangered languages such as the Xacriabá provide special challenges for collection and data analysis since there is no data abundancy in the tribe. If we think about a language that is widely spoken such as Portuguese with more than 280 million speakers, data is everywhere, we can find it in books, signs, oral language, poetry, newspapers and so on, but if we think about a language such as the Xacriabá which is only spoken by few of the elderly in a small tribe lots of difficulties arise. There is no possibility for collecting spoken data from people from different ages, in different interactive contexts such as family or school talk or in different types of media such as newspapers, poetry or school books. The small amount of data makes

mandatory the use systems for collecting and storing language if one aims to preserve it. In this case every single word is important and needs to be studied in all linguistic aspects possible.

At last, creating open archives for primary data is according to Himmelmann [2] an area of pronounced interest because it makes analyses countable. From this first attempt researchers have comparative data to verify their own through all sorts of practical checks and methodological checks, what in fact makes possible the advance of science.

2.1 Technology and Information Management
The term Information Technology according to Beal [3], is used to describe the set of technological and computing resources made for generation and use of information. IT according Rezende (2000) is based on the following components: Hardware, its devices, and peripherals; Software and its features; Telecommunications systems; Data management and information [3]. Within this environment "Information and Communication Technologies (ICT)", a term used by Silva [4], covers all participant elements of information technology and allows information to be produced dynamically; being disseminated and shared nearly in real time.

In indigenous communities such processes of acquisition and dissemination of knowledge are present in several ways. The "explicit" transmission of knowledge is performed directly via interaction among its members, as customs are passed through activities conducted in groups. Knowledge is part of the indigenous reality and the content is something very natural and part of the interaction in the villages [5].

These factors lead us to the processes of knowledge management, either directly or indirectly, since the main challenge now is the acquisition and transfer of tacit and declarative knowledge in an interactive and spiral transformation process, which leads to transmission and creation of knowledge in a dynamic and ongoing process. So, through information technology there is, in some ways, spiral of knowledge to be disseminated with knowledge being exchanged, converted, combined with other existing forms that create new ones for the society, then, building an information network.

3. SYSTEM FOR CATALOGING INDIGENOUS WORDS

SISCAPI is a web system that seeks to meet a need perceived by the Xakriabá. The Indigenous Land Xakriabá is located in the municipality of São João das Missões in the northern Minas Gerais. One of the consequences of permanent contact with non-Indians is the absence of an indigenous language itself among Xakriabá, which speak portuguese in a specific variant. The Xakriabá are implementing the Akwen language

revitalization process from contacts with the Xerente, but there are no linguistic studies on the Portuguese spoken and written by the Xakriabá nor about the revitalization process of considering their native language [6, 7].

3.1 A View of SISCAPI
Concerning the technology used in building the system we opted for the web platform that allows the circulation of the information network on any computer, anywhere in the world. As there are several communities and indigenous languages it is possible to bind them both in the system which would allow a comparison and integration among speakers concerning the vocabulary used, providing a uniform and centralized way to access. Image 01 presents the information and main ideas covered by SISCAPI [6, 7].
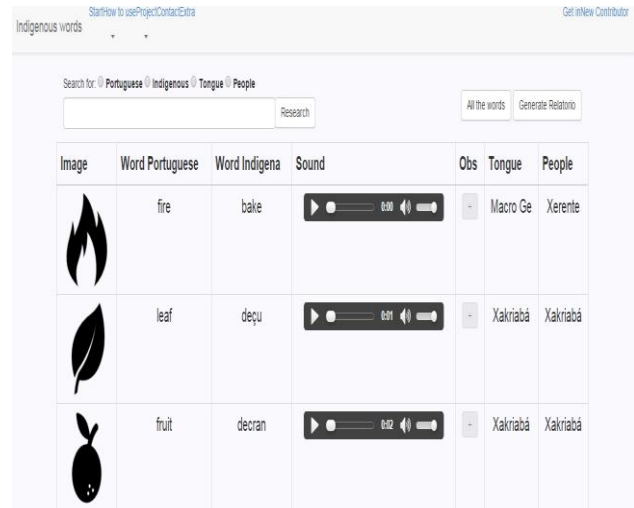

Image 1. Source:. The author. Home screen: contains the registered indigenous words (text, image and sound).

The system is online and available at the website www.palavrasindigenas.com.br to aid recovery and storage of indigenous dialects contributing in education and language learning through the cataloging of words, sounds and images used in these communities. The SISCAPI enables to catalog words of the indigenous vocabulary through word storage (writing), sound (pronunciation) and image (branding). Data was structured according to the standards of exchange of information on the web and was produced and stored so it can be found and reused.

4. FINAL THOUGHTS

The use of networked systems can enable the sharing of different information, leading communities to exchange knowledge. The provision of on-line vocabulary, for example, can be constituted as a significant contribution to the preservation and perpetuation of cultures at different levels, from written to oral representation. This kind of approach can provide enormous advances because a larger set of data is shared. In this context,

information systems are presented as solutions for processes of storage and information production, from data transformation and through the application of human knowledge.

Whereas one of the main problems perpetuated over the years is the lack of records of practices and cultural activities of people, it is understood that a system can significantly contribute to perpetuating their memory. Information systems are presented as good proposals to provide easier access to information, data collection, storage, search and selection.

SISCAPI seeks to foster discussion about the loss of indigenous languages which implies the risk of loss of culture, because any language as simple as it is involves several other aspects to be studied, resulting in adjustments and improvements to the system. It is hoped that this initiative creates subsidies for knowledge and storage of indigenous languages and based on data collected develop other studies focusing on the preservation of dialects, improvements and or creation of systems focusing indigenous peoples.

Thus, it is considered that the alternative of using a web system that enables data sharing, as well as its storage in different digital media. It is therefore a viable means to disseminate and communicate the language of a people.

5. REFERENCES

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