ARTICLE

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LIBRARIES AS FACILITATORS IN ACCESS TO INFORMATION BY VISUALLY IMPAIRED USERS

AS BIBLIOTECAS COMO FACILITADORAS NO ACESSO À INFORMAÇÃO POR USUÁRIOS COM DEFICIÊNCIA VISUAL

LAS BIBLIOTECAS COMO FACILITADORAS EN EL ACCESO A LA INFORMACIÓN POR USUARIOS CON DEFICIENCIA VISUAL

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JITA: CC. User categories: children, young people, social groups.

RESUMO: Este artigo trata do papel das bibliotecas como colaboradoras no processo de aquisição da informação pelos usuários com deficiência visual. Ele tem como objetivo mostrar a importância desse papel no processo de inclusão social desses usuários e a necessidade de se discutir esta temática. Como ponto fundamental para sua inclusão encontram-se a produção e oferta de materiais alternativos. São citadas as barreiras enfrentadas no processo de aquisição, como a falta de materiais adaptados e o custo de produção. Também é apresentado um histórico da aquisição de informações desses usuários e de sua inclusão em bibliotecas brasileiras e no exterior. O método de pesquisa utilizado foi a revisão de literatura**,** tendo sido consultadas as bases de dados*Library and Information Science Abstracts* (LISA), *Library & Information Science and TechnologyAbstracts* (LISTA), *Information Science and Technology Abstracts* (ISTA), a Base de dados de Periódicos em Ciência da Informação (BRAPCI), Google e Google Acadêmico.Como conclusão, apontamos a cooperação entre os serviços de bibliotecas como solução para essa questão.

PALAVRAS-CHAVE: Biblioteca. Deficiente visual. Inclusão social. Produto de informação. Serviço de informação.

ABSTRACT: This article deals with the role of libraries as collaborators in the process of information acquisition by visually impaired users. It aims to show the importance of this role in the process of social inclusion of these users and the need to discuss this issue. As a fundamental point for its inclusion are the production and supply of alternative materials. The barriers faced in the process of information acquisition are cited, such as the lack of adapted materials and the cost of production. It also presents a history of the acquisition of information from these users and their inclusion in Brazilian and foreign libraries. The research method used was the literature review having been consulted the database*Library and Information Science Abstracts* (LISA), *Library & Information Science and TechnologyAbstracts* (LISTA), *Information Science and Technology Abstracts* (ISTA), Base de dados de Periódicos em Ciência da Informação (BRAPCI), Google and Google Scholar.As a conclusion, we point out the cooperation between library services as a solution to this issue.

KEYWORDS: Information products. Information services. Libraries. Reference service. Social inclusion. Visually impaired users.

RESUMEN: Este artículo trata del papel de las bibliotecas como colaboradoras en el proceso de la recuperación de la información por los usuarios con deficiencia visual. Pretende mostrar la importancia de esta función en el proceso de inclusión social de los usuarios y la necesidad de discutir el tema en la búsqueda de soluciones. Como punto fundamental para su inclusión se encuentran la producción y oferta de materiales alternativos. Se citan las barreras enfrentadas en el proceso de adquisición, como la falta de materiales adaptados y el costo de la producción. También se presenta un historial de la recuperación de la información de esos usuarios y de su inclusión en bibliotecas brasileñas y en el exterior. El método de investigación utilizado fue la revisión de la literatura,habiendo sido consultadas las bases de datos, *Library and Information ScienceAbstracts* (LISA), *Library & Information Science and TechnologyAbstracts*(LISTA), *Information Science and TechnologyAbstracts* (ISTA), Base de dados de Periódicos em Ciência da Informação (BRAPCI), Google y Google Scholar. Como conclusión, señalamos la cooperación entre los servicios de las bibliotecas como solución a esta cuestión.

PALABRAS CLAVE: Biblioteca. Deficiente visual. Inclusión social. Producto de información. Servicio de información.

1. INTRODUCTION

The impact that information technology (IT) has had on people's lives is proven by several authors in the literature. The process of communication between people, until the advent of the internet, occurred more simply and the number of information available was much lower. With IT, we are increasingly gaining access to more information through devices with increasing sophistication. Here we are talking about users who have the free choice of information they want to consume. Of course, this access goes through the barriers faced by each consumer, such as financial resources.

Bringing the discussion to people with disabilities, particularly those with visual impairment, this reality is transformed. If, on the one hand, IT has brought into their lives access to a range of information, on the other, the lack of digital accessibility acts as a barrier to certain types of information. For these users there is no choice, their consumption of information is conditioned to those adapted to their limitations, and unfortunately, this information is not many.

According to Kavanagh; Skold (2009) and the World Blind Union (2013), 5% to 7% of what is published by the publishing market of developed countries and less than 1% in developing countries is available in an adapted format.

This situation of poor availability of adapted materials began with publications in print and was aggravated with the digital medium by the speed with which information is disseminated, since the process of adaptation is slow and costly.

Brazier (2011) states that there are 1.8 million blind or visually impaired people in the United Kingdom, most of whom are over 65 and many with health and mobility problems. For these people, finding enough to read is a challenge because less than 5% of books are transcribed in formats accessible to them, such as audio, enlarged or Braille books. It is worth mentioning that audio and Braille formats need some kind of adaptation to become accessible (description of images, formatting, etc.).

To mitigate this scenario, the action of libraries in the preparation and delivery of alternative materials is fundamental. As a result of this and to improve access to the library and information services for people with visual impairment, Share the Vision in the United Kingdom joined the Society of Chief Librarians to launch a pilot initiative in the Northeast region of this country. The purpose of this project was to extend the offer of libraries that provided products and services of information (PSI) of this region to users of other libraries. In addition, the project aimed to make this offer reach these users effectively, promoting the integration of PSI and developing sustainable models in the provision of services.

One of the barriers to be faced by these materials is their high cost of production.

Vitzansky (1994) states that these depend on public or private funds. The publishing market is not interested in this production because it is unattractive due to its restricted character, a small niche market.

Some authors such as Rabelo (1989), Griebel (2000), Bernardi (2004), Kanavanagh and Skold (2005, 2009) argue that one way to improve this situation is to co-operate with library services, which can reduce costs and eliminate duplication of work.

New Zealand public libraries that offer extended audio books have tried for a few years the cooperation between the Royal New Zealand Foundation for the Blind (RNFZB) and the National Library of New Zealand's Print Disabilities Collection, for the production and loan of audiobooks for libraries public policies. However, as the cost of production was too high for a very small market, the partnership did not stand firm. On the other hand, an example of successful cooperation is that of the American libraries, which have a network that serves the information needs of the users, through loans and a unified catalog (WILSON, 2003).

With the advent of the new reality, information in digital media, adoption of standards for library services was necessary to ensure data exchange, interoperability of library systems and support to national and international library networks.

The launch of books in Daisy format by the International Federation of Library Associations and Institutions (IFLA) / Library for the Blind Section (LBS) in 1994 served as a stimulus to the adoption of standards that facilitate the exchange of information and the reduction of costs in the offering accessible books (KAVANAGH and SKOLD, 2009, p.12). This fact is of great importance taking into account the hard and difficult reality of the access to information for the visually impaired, without the power of choice of what they will be able to read.

Since then, IFLA has also published other guidelines for the development of libraries for the visually impaired[1], which are of the utmost importance for information professionals to have parameters in creating libraries or library services for those users. With this action, IFLA stimulated cost reduction and the creation of new libraries

These guidelines address key issues for the structuring and creation of these libraries, including the need for policy development of collections, use of technical standards, creation of specific legislation, production of alternative materials, and cooperation and creation of networks. Their main objective is:

> Provide libraries, governments and other maintainers with a framework for developing library services for people unable to use printed materials. When

[1] "For the purposes of these guidelines, people who are unable to use printed materials will be those who are unable to use printed material due to blindness, poor eyesight, a learning disability or a physical disability" (KAVANAGH; SKOLD, 2009, p. 9).

> appropriate, these guidelines are confirmed with examples from several countries around the world (KAVANAGH; SKOLD, 2009, p.12).

All these initiatives and proposals are fundamental to bring the subject to the fore, generating discussions that can seek solutions, since we know that, even in developed countries, the supply of accessible materials is 5 to 7% of all materials published in their countries (ditto, 2009, WORLD BLIND UNION, 2013).

2. METHODOLOGY

The research method used was the literature review, with the following databases: Library and Information Science Abstracts (LISA), Library and Information Science and Technology Abstracts (LISTA), Information Science and Technology Abstracts (ISTA), data from Periodicals in Information Science (BRAPCI), Google and Google Scholar.

The search strategies used and the results of the surveys can be seen in Tables 1 and 2.

Chart 1: Terms used in the surveys of April 2014 and April and October 2016, and 2017

Terms used in Google / Google academic		Terms used in databases	
Terms in Portuguese	Terms in english	Terms in portuguese	Terms in english
Definition of information products and services	products and services for blind peoples	Deficiente visual	SU ("PEOPLE with disabilities -- Services for" AND Su (visual OR blind) OR SU ("BLIND -- Services for")
Information units	Library	Deficientes visuais	
Users with visual impairment	libraries	Cego	

Information products and services for the visually impaired and inclusive societies	marketing of library and information products and services	Library	SU BLIND* AND SU (SERVICE* OR PRODUCT*) blind and partially sighted" "blind and partially-sighted" "blind and visually handicapped" "blind and partially users" "blind and partially sighted people"; Service (s); Product (s) LIBRARIES & people with visual disabilities
Blind		Information science	
Information products	“products and services for blind peoples”.	Services	su(Exact("blind and partially sighted" OR "blind and partially-sighted" OR "blind and visually handicapped" OR "blind and partially users" OR "blindness" OR "blind and partially sighted people") OR BLIND) AND su ((SERVICE* OR PRODUCT*))
Visual deficients			
Information services			
People with visual impairment		"Information science " OR "library" OR "Librarianship" And all fields: blind OR blinds OR "visually impaired" OR "visually deficient" OR "visual deficiency") (Title: “Information science " OR "biblioteca" OR "Librarianship" And all fields: blind OR blinds OR "visually impaired" OR "visually deficient" OR "visual deficiency")	((DE "LIBRARIES & the blind" OR DE "LIBRARIES & people with visual disabilities" OR DE "PEOPLE with visual disabilities”) OR (DE "LIBRARIES & the blind")) AND SU (service* or product*)
Marketing			
Assistive technology			
Digital accessibility			
"Accessible digital libraries for the visually impaired in Brazil"			
"Digital Libraries for the Visually Impaired in Brazil"			
Low vision users			
Visually impaired users			

and libraries			
marketing of library and information products and services			

Source: The authors.

Chart 2: Recovered and relevant documents resulting from the surveys conducted in 2014, 2016 and 2017

Sources	1º Survey 2014		2º Survey April 2016		3º Survey October 2016		4º Survey August 2017	
	Recovered items (IRec)	Relevant items (IRel)	IRec	IRel	IRec	IRel	IRec	IRel
LISA	192	51	311	55	-	6	624	69
LISTA	127	30	263	40	-	-	314	9
ISTA	2	2	18	6	-	-	25	7
BRAPCI	18	15	112	14+	-	-	105	20
BDTD	5	-	43	7	-	-	-	-
UnB Institutional Repository	3	1	2	-	-	-	-	-
Google	30	13	14	14	-	-	-	-
Others	9	6	1	-	-	-	-	-

Source: the authors.

With the result of the surveys were selected the relevant materials for the theoretical foundation of this article.

3. INFORMATION SCIENCE AND THE PROCESS OF SOCIAL INCLUSION

One of the means of social inclusion is access to information. How to define the information and how to size its value? According to Fullmer and Majumder (1991, p. 17):

> Information / knowledge is power. The ability to obtain and use information about a subject gives the individual the opportunity to choose a path of many alternatives, rather than limiting himself to some options that may be unwanted or unfeasible.

We know the importance of information for the development of the human being in all its dimension. Especially in the case of visually impaired people, because of the difficulties they face in accessing and acquiring information, it is essential for their socialization and educational training, especially when it comes to digital information, which has brought these citizens more autonomy.

Gerber (2003) emphasizes the importance of computer use and internet access in the lives of people with visual impairment, such as educational improvement, employment opportunities, increased socialization through social networks (via e-mail and online groups) and independence (with personal access to information).

In the literature of Information Science, there are several definitions of "information". Le Coadic (2004, p.4) points out that "information is an inscribed (recorded) knowledge in written form (printed or digital), oral or audiovisual, in a medium." Beal (2004, p.12) defines information as "data endowed with relevance and purpose"; Buckland (1991, p.353) conceptualizes information in three ways:

> (a) information is a process - as a reference to your property of informing or communicating; (b) it is knowledge - when it refers to what is passed in the action of informing or communicating; (c) is a matter, when it is linked to the data and, consequently, to the physical medium, where these data are recorded.

Following the definitions of the authors mentioned above, we can conclude that a set of organized data can be considered information, which in a context can be considered as knowledge that will be communicated or transmitted to someone. This knowledge must be organized and made available to meet the information needs (IN) of different users, whether in their professional or personal life. Today, the science that has as main occupation the treatment and provision of information, which results in the organization of this knowledge, is Information Science.

According to Le Coadic (2004, p.19), it is a "social science" that has as its concern access to information by different users, and the area that takes care of the mapping of its IN is the area of study of users. Le Coadic (2004, p.19) thus defines Information Science:

> Concerned with clarifying a concrete social problem, that of information, and aimed at the social being seeking information, it is situated in the field of social sciences (of the sciences of man and society), which are the main means of access to an understanding the social and the cultural.

Analyzing the quotation from Le Coadic, we can conclude that the Information Science, when participating in the social process, plays an important role when, through the units of information (IU), provides instruments, which are the products and services, of access to information by various users, becoming an agent that transforms these people's lives.

In this regard, Guinchat and Menou (1994, p. 486) state that:

> The information unit should do everything possible to know the real needs of its users and their evolution, determine their degree of satisfaction and adapt accordingly. In addition to studies of needs and behaviors, this implies a personal contact as narrow as possible with the user. Your criticisms, advice and suggestions should be requested and heard.

The task of providing adequate information to its users requires the identification of its informational demands through user studies. In the case of visually impaired users, the commitment of the information professional and the value of their work are essential because of the difficulties faced by these users, since in their almost totality the information is not adapted to their special needs.

Libraries, therefore, are responsible for facilitating, through the offered PSI, access to and acquisition of information, not only in printed format, but also in audio recordings and digital media. They are also responsible for the production of these products through the adaptation of alternative materials. Thus, the participation of libraries in the process of social inclusion brings autonomy, allowing the person to have the freedom to choose the information he needs.

In this context, it is important to know the history of the acquisition of information by people with visual impairment, in order to understand the relevance of the products and services provided by libraries, a subject to be developed below.

4. PRODUCTS AND SERVICES AND ACCESS TO INFORMATION

According to McGarry (1999), human collective access to oral memory began in the early days of mankind, followed by access to the collective memory written in 1700 BC. For the visually impaired, this access came only with the invention of Braille writing in 1824, that is, the difference in access between the seers (seekers) and the visually impaired is about 3500 years, causing, according to Passos (2010, 52), an intellectual abyss, with a lag in the access. In Chart 3, we can see the difference in access to information by the two subjects:

Chart 3: Difference of access to collective memory between visually impaired and visionary

Subjects	Acess to collective oral memory	Acess to collective written memory	Acess to collective printed memory	Acess to collective digital memory
Visionary (see normally) (1)	From the beginning of mankind	1700 B.C. (MCGARRY)	1450: rise of Gutemberg's press (MCGARRY)	1981: first PC (COADIC)

Visually impaired (2)	From the beginning of mankind	1824: invention of Braille	1893: first Braille press (BROWN)	1983: first assistive technology (WALLING)
Difference of years in the possibility of access to records between (1) and (2)	There is not	About 3500 years	About 440 years	About two years

Source: Passos (2010, p. 52).

With the written record of knowledge available on various media, natural language, which was the basis of collective memory construction, was no longer exclusive. The need arises for the organization of this knowledge and, therefore, a place where the materials are stored. Libraries are created and, later, the provision of products and services to its users.

The reduction of the intellectual gap depends, among other factors, on the role of the library and information professionals as producers of alternative materials and facilitating their access. For this it is necessary to know in more depth the new user of the library and what he needs in terms of information. In this process it is essential to know, at first, your level of vision, to decide if this information should be offered in printed format, in braille, amplified, in audio format, recorded by human voice or in digital medium to be read by synthesized voice screen readers.

We can consider, according to Veiga (1946), that the first information products were the materials produced in Braille. The Braille script began with the manual ruler and puncture, tools for its production. Until the 1930s, mechanical and electrical braille machines (notably the American company Perkins) were used to register information. At that time the first Braille presses were created, large equipment for the production of braille in large scale. At the end of the seventeenth century, according to the author, came the idea of fixing the types of press in stems arranged so that the blind could write, beating with those stems.

Since Braille presses and machines produced only linear letters and texts, an important machine, the Termoform, was created, a device used to make drawings in Braille, such as maps and graphs. Later came the recorders (the old ones with magnetic tapes, the portable ones with cassette tapes, the digital ones) that allowed the capture, the transport and the storage of data, like support for the audio information, very important for the people with visual deficiency.

In Brazil, in the 1950s, the Foundation for the Book of the Blind was created, which became known as the Dorina Nowill Foundation, the first Braille press to work in the various

areas of visual impairment. In 1975, this foundation began a work of empowering the blind in the use of a device called Optacom, which allowed the blind to contact the written form perceiving the outline of the images.

In the 1970s, more sophisticated devices, such as the LIBRA program (Listador Braile), developed by programmers with visual impairment from the Data Processing Company of the City of São Paulo, were developed. By adapting to conventional printers, LIBRA performs Braille character printing, allowing these programmers to no longer need human readers to help them correct and finalize their programs.

A key development in the early 1980s was the creation of IBM's first voice synthesizer, Roscoe, which was the beginning of screen readers that enabled the visually impaired to read digital media.

In the late 1980s, there was the invention of microcomputers, the first scanners, the first Braille printers, the most advanced screen-reader software and synthesizers.

We can consider that the great landmark in access to information by people with visual impairment was the invention of Braille writing. From then on and with the evolution of all these PSI presented, the forms of access to information by these users were expanded.

5. LIBRARIES AS A WAY OF SOCIAL INCLUSION

The scenario of the process of social inclusion of people with disabilities in Brazil has evolved and been more debated. Works have increasingly appeared in the literature of Information Science. While having legislation in the area, there is a need for more effective enforcement to ensure that laws are enforced. Beyond this fulfillment, a work of awareness of the society with regard to the acceptance of the differences is necessary. Educational action to fill the lack of information about the disability should be part of this work. Both movements are fundamental in this process.

As an important part of the inclusion process, access to information is critical. In relation to the visually impaired, who are the majority among the disabled in Brazil, with regard to this access, the Information Units (IU) have developed products and services, mainly in the digital environment, essential in the reading of documents. Assistive technology products in particular have been a great facilitator. These products are developed by assistive technology that is an area of knowledge, with an interdisciplinary character, encompassing products, resources, methodologies, strategies, practices and services that give more autonomy, independence and quality of life to people with disabilities or reduced mobility (PORTAL BRASIL, 2010).

The importance of information as an element of improvement in the quality of life of the visually impaired is undoubtedly open, opening spaces to arouse important discussions in both the political and social spheres.

In the process of inclusion, Information Units assuming its social role as responsible for facilitating the process of acquiring information from these users, collaborate to avoid the marginalization of the visually impaired in society and, consequently, the exclusion of their processes.

The works for the visually impaired user were started by libraries at different times in different countries. According to Kavanagh and Skold (2009), in some countries library services for the blind and those unable to read printed materials began more than two centuries ago. Philanthropic women in the United States and Europe have founded charitable services for the disabled, and some of these people have created library services for the blind. In order to spread Christianity, missionary women distributed accessible bibles and were responsible for founding libraries for the blind in Asia and Africa.

What's more, many libraries for the blind have emerged from rehab services for visually impaired veterans. They were another extension of rehabilitation services for blind people, charities, and were not part of the national library system.

5.1 Abroad

As the United States is a reference in libraries for the visually impaired, we will present a brief history on the subject. According to Gerstenberger (1985), the history of the inclusion of visually impaired people in libraries was as follows. Probably the first library service for the blind in the United States was the loan of embossed books (Braille and various other writing methods) by the Boston Public Library around 1868. And the first recognition by the federal government that blind people could readwas the ratification, in 1904, of legislation that allowed relief reading material for the blind to be sent free via American mail.

According to Farrel (2012), the process of inclusion of the visually impaired was initiated when John Russell Young, the librarian of Congress in 1897, created a reading room for the blind with about 500 books and music items. In the 1890s, the Boston Public Library, the Philadelphia Free Library, the Chicago Library, the Free Circulation Library for the Blind in New York and the Detroit Public Library began offering materials for the visually impaired. The New York State Library was the first to create a department for these users.

In 1913, the American Parliament demanded that a copy of each book published for educational purposes, under government subsidy by the American Printing House for the Blind, be deposited in the Library of Congress. Slowly, materials were available in accessible format. One event that became a landmark in access to information for the visually impaired was when President Hoover signed the Pratt-Smoot Act in 1931, giving broader support to

the visually impaired. This bill authorized an annual $ 100,000 grant from the Library of Congress to provide books for blind adult residents in the United States and its territories.

The program evolved into the National Library Service for the Visually and Physically Disabled. The creation of a uniform Braille system in English and the emergence of the spoken book in 1933 showed an improvement in these services. In 1952, legislation was expanded to include services for blind children. Ten years later, the program was supplemented by a library of musical scores and instructional text for the blind and, in 1966, Bill no. 889-522 authorized the creation of spoken books for all persons who could not read standard printed material for physical or visual impairment.

Barriers still remain, and in 1996 Senator Chaffee introduced an amendment to the Copyright Act, which eliminated the need for governmental and non-profit agencies to seek permission from publishers or copyright owners to reproduce printed materials in special formats for readers blind or physically disabled (NLS, 1983). From a start of 19 cooperative libraries, the network has expanded to 57 regional and 86 subregional libraries.

The Library of Congress, major urban libraries and American state libraries have played a key role in the development of libraries for the visually impaired. Currently, the Library of Congress National Library Service for the Blind and Physically Handicapped (NLS) administers the Service of Spoken Books and Braille, a free program in which loans are made from recorded books, Braille books and magazines, sheet music musical instruments in braille and enlarged letters, as well as reproductive equipment for residents of the United States who are unable to read or use standard printed materials because of visual or physical impairment. This material is sent by the local cooperating libraries, which send all material directly to the enrollees at no cost. Spoken books, magazines and publications in braille are delivered to users by postage-free mail and through a network of cooperative libraries (WILSON, 2003).

Denmark and Sweden follow the American model in which a national network of libraries for the blind is fully funded by the government. In Canada, Australia, and the United Kingdom, services for the visually impaired developed outside the main library system, more as an extension of charitable agencies committed to their rehabilitation and providing books tailored to their reading needs (KAVANAGH; SKOLD, 2009).

Canada, with the Visunet Canada Partners Program, a partnership between public libraries and library services for the blind, followed the path of cooperation. This model is based not only on cooperation, but also on the integration of the blind service with the library's conventional services. Through this program, the local library has access to an online catalog of the collection in various formats and to a number of digital resources including newspapers, magazines and publications available in electronic format (GRIEBEL, 2000).

The National Library of Australia has the role of facilitator in coordinating and co-operating library services that provide PSI for users with various disabilities. It carries out this work through a section of the library created for this purpose, making available and maintaining a national catalog of materials in an alternative format, the National Catalog of Materials for People with Disabilities (NUC: D) offered by libraries and produced throughout Australia (AUSTRALIAN LIBRARY AND INFORMATION ASSOCIATION, 1998).

In the United Kingdom, the National Library for the Blind (NLB) was a public library, founded in 1882, to ensure that visually impaired people have the same access to library services as other users. In 2007, NLB was incorporated by the Royal National Institute of Blind People (RNIB), a charity, and became part of the National Library Service of the RNIB (ROYAL NATIONAL INSTITUTE OF BLIND PEOPLE, 2017).

5.2 In Brazil

The Brazilian reality is at a different time from abroad, as is the process of social inclusion of people with disabilities.

With regard to education, the disabled began to gain visibility for Brazilian society in the 1950s, when Brazilian educational policy created special education, with special classes and, thus, began to include the disabled through education . The education of the visually impaired began with the founding of the Imperial Institute of the Blind Boys in Rio de Janeiro in 1891, later called the Benjamin Constant Institute. It was aimed at primary education and some branches of secondary education, offering moral and religious education, music, crafts, and manual labor (JANNUZZI, 2006). Subsequently the Institute created a library with materials in Braille.

In order to understand how the emergence of library services for the visually impaired, a brief history will be mentioned.

The oldest record found on a library for the blind is at the time of the founding of the Association for the Promotion of Instruction and Work for the Blind (APIT), in the city of São Paulo, when its launch manifesto signed by 14 blind people includes the creation of a library. The APIT is currently active, but the idea of the library did not go ahead According to Masine (2014), in 1943 a Braille Library was installed in the Caetano de Campos School, in the city of São Paulo. Dorina de Gouveia Nowill was invited to enroll as a regular student at this school. From a visit to the Padre Chico Institute for the Blind, Dorina and a group of colleagues learned the Braille system and created booklets and intermediate reading books. At that moment a change in education was triggered. Dorina, realizing, at that time, the lack of books made in Braille in Brazil, created, with other normalists, the Dorina Nowill Foundation for the Blind.

In 1946, the Braile Books Sector of the Monteiro Lobato Children's Library, in São Paulo, was also created, which soon became a room for students with visual disabilities to attend. The first blind service in a public library in Brazil begins. In 1947, the first experience of educating the blind was made official with the creation of the first Latin American course for the training of blind education teachers at the Caetano de Campos School (NOWILL, 2002).

From there, library services began to appear for visually impaired users and small collections in Braille were made available called Braille Sectors. Libraries created specifically for these users are few, and in general, these services are concentrated in the library reference service.

It is worth emphasizing the role of the libraries of the Brazilian public and private universities, which have demonstrated the concern to offer these ISPs, such as the Accessibility Laboratory of the State University of Campinas (UNICAMP), the Library of the Federal University of Rio Grande do Norte, Central University of Brasilia (GIL, 2012).

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It is worth emphasizing the role of the libraries of the Brazilian public and private universities, which have demonstrated the concern to offer these PSI, such as the Accessibility Laboratory of the State University of Campinas (UNICAMP), the Library of the Federal University of Rio Grande do Norte, Central University of Brasilia (UnB), the library of Londrina State University (UEL), among others (MALHEIROS, 2013, p. 28).

These libraries invest in the process of inclusion of these users, fulfilling an important function in helping these students stay and providing the information adapted and necessary for their development, having implemented several actions to facilitate the permanence of these students and to reduce their difficulties through their organs of inclusion, giving support to university life (ditto, 2013, page 28).

Private libraries have also offered PSI for visually impaired users. Examples include the libraries of the Dorina Nowill Foundation and the Benjamin Constant Institute, which are the largest Brazilian libraries for visually impaired users.

Added to these libraries are the accessible digital libraries, which by the facilities brought by the digital information to the users in question, are growing every day. As an example we can mention the Digital Library for the Visually Impaired of the São Paulo Methodist University, the Sonora Virtual Library of the Estácio de Sá University of Campos dos Goytacazes, the Dorina Nowill Foundation Digital Library, Dorinateca, the Accessible Digital Library of the Ministry of Education (MEC), the Digital Library of the State University of Campinas (UNICAMP), and the Digital and Sonora Library (BDS) of the University of Brasília (UnB), the Accessible Information Repository of the Federal University of Rio Grande do Norte (RIA / UFRN), Virtual Library of the Catarinense Association for the Integration of the Blind (ACIC), among others (MALHEIROS, 2013, p. 35, SANTOS; ARAÚJO, 2015).

6. INFORMATION PRODUCTS AND SERVICES

In libraries, the reference sector is the key area, being responsible for the availability of the products offered, which have been developing more and more in the internet environment. The availability of services through the call Web 2.0 resulted in more agility and efficiency in the service to the users.

The products of the libraries and their disclosure made available by the reference service must be built within the universal concept to reach all users. If the team that directs the library has an inclusive view, the activities will be directed towards this and the product will also be inclusive, serving all users. As well as referral services for general users, those services for visually impaired users also move to digital resources.

As an example we can cite the Reference Service of the Northern Illinois University's Founders Memorial Library, analyzed by Tinerella and Dick (2005), who also showed other reference services of university libraries for visually impaired users. This service usually has the assistance of a visually impaired student trained to attend. The training began in the 1990s and with this attitude the library gained students experience and job references. This action is

part of the University Libraries Services for Persons with Disabilities Program, developed in the early 1980s.

The PSI made available by the library and pointed out by these two authors are:

• Electro-optical devices, such as the recognition of optical and utility characters for screen enlargement; magnification software; closed circuit television; visual image processing; scanners; reading systems for students with low vision; adapted communication devices such as enlarged keyboards and typewriters.

• Sensory replacement devices, such as spoken books, calculators, audio recordings, voice synthesizers, speech compressors, auditory markers, and reading machines; Braille readers, Braille typewriters, keyboards and monitors; relative size devices that expand printed material, symbols, and other items.

• Optical devices for people with low vision, including glasses, hand and foot magnifiers, telescopic and absorptive UV lenses; lighting devices, brightness, contrast and color; and expanded books and magazines.

A pleasant atmosphere should be offered to these students to awaken a sense of confidence that they will be attended to when they need it. University libraries can, with some accommodations at a low cost, give good service to their visually impaired users.

The authors conclude that students with disabilities often feel isolated and are sensitive to the perception that they are different. With a positive attitude, university libraries can make them feel welcomed. And if "the academic library is truly committed to full inclusion and equal opportunities, then the participation and commitment of all reference staff is essential" (TINERELLA; DICK, p. 32, 2005).

For Monteiro (2010), there are innumerable possibilities that the referral service and information have through the assistive technology to attend visually impaired users and their role as mediator of the user question to the environment of the information unit. This service has undergone changes with the arrival of digital information and, increasingly, tasks are performed on the computer. The tasks of this service are: to mediate between the information and the user; assist in the search, retrieval and access to information and documents; provide education for the use of these resources and the system; do the alert work and selective dissemination of information; disclose new products and services; and carry out the planning and supervision of these activities directed to this public.

As stated by the author mentioned above, Assistive Technology (TA) has brought many possibilities for reference services in the care of visually impaired users. TA resources

not only made it easier for them to access information. Information in digital media opened new horizons of access and TA contributed to its realization.

Bernardi (2004), in his literature review, lists the services provided by national or local agencies and the projects of library networks that are: special materials in traditional format, such as braille, audio books and expanded books; Assistive technology, along with training for users and librarians; audio books, CD-ROMs, Braille and expanded books occupy an increasing part of the services of public libraries; services such as access to specific catalogs, digital texts, digital spoken books, Daisy-format books and a special inter-library loan format.

As we can see, among the various possibilities of products and services, we can highlight the assistive technology (TA), through which these users access computer programs, internet and digital resources using braille, screen magnification, software scanning with OCR, screen readers and speech synthesis (idem, 2004).

To access information, visually impaired users require different features depending on their visual residue. This applies to both print and digital media. Sonza (2008) divides TA into two groups: interfaces for users with low vision and interfaces for blind users, taking into account that the needs of each group are different. For blind users, software features are screen readers or speech synthesizers, which are programs that identify and interpret the information displayed on the monitor screen and pass on that information through speech synthesis, and establish a dialogue with the user. user's own applications with recorded human voice. Also users with low severe vision can use these features. The interfaces for users with mild and moderate vision, who have a greater residual vision, may be the screen magnification and the contrast.

Regarding the hardware for blind users the interfaces are Braille printers, which print braille material and which can have the print function coupled with other functions. They can come with the Duxbury Programs, with the Easy Braille program and the embossed printer, the Thermoform, which copies richly embossed material so that users can use graphics, maps, drawings. Other hardware features are the output devices in Braille, Braille Speech, which is a portable information storage and processing system, in which data input is done through a six-point braille keyboard and the output is done by means of a speech synthesizer; the braille terminal, electronic equipment connected to the computer and braile lite, personal assistant that works as a Palm pilot, with a notebook to take notes, a calendar and a planner (SONZA, 2008).

There are different types of Braille printers on the world market today, whether for individual use (small size) or for large scale (medium and large size) production. Production speeds are very varied. These printers can generally print braille interposed or not at six or eight points as well as produce designs. Some Braille printers can use loose leaf, but most run with continuous form (CERQUEIRA; FERREIRA, 2000).

The embossed printer, or thermoform uses for printing the sheet of plastic (German Paper), for drawing (two-dimensional). It is used for printing charts, maps, etc. This is a vacuum molding system of a heated plastic film, which is thereby compressed against a mold (the preparation of this mold can be carried out by computerized or artisanal processes). It can also be used in making copies of Braille texts (THE HISTORY|..., 2008).

Screen readers or voice synthesizers are widely used by blind users as well as by users with severe low-vision when reading texts in digital media. There are several players currently available: Dosvox, Virtual Vision, Jaws, Non Visual Desktop Access (NVDA) (for Windows environment), Orca (for Linux), Voice Over (for Mac OS) and others.

An important research on the use of screen readers by people with disabilities was conducted in 2015 by the Webaim - Center for Persons with Disabilities, Utah State University. The most used screen readers were: Jaws, 30.2%; ZoomText, 22.2%; Window-Eyes, 20.7%; NVDA, 14.6%; VoiceOver, 7.6%; System Access or System Access To Go, 1.5%; ChromeVox, 0.3%. According to the survey, the trend from January 2014 to July 2015 is the fall of Jaws and NVDA, the rise of Zoom text and Windows-Eyes, and Voiceover and System access to go have remained stable (SCREEN ... , 2015).

Malheiros (2009), according to the results of his study of the visually impaired user of the University of Brasilia, finds that the digital information is the most used by these users. For this reason, it is very important that the professionals responsible for developing these interfaces are attentive to the issue of universal design, which, according to Sonza (2008), aims to value human diversity to avoid exclusion. Inattention to this issue has the effect of limiting access to a world of information that is available on the internet.

7. FINAL THOUGHTS

The PSI offered by the libraries is a fundamental point in the autonomy of people with visual impairment and, in order to develop them, it is necessary to include them in the general planning of the library. It is necessary to focus on the development of collections through a study of users, with the aim of providing a good service to the information needs of visually impaired users, thereby reducing the costs of the production process of alternative materials and resulting in more efficient PSI.

The studies of visually impaired users are insufficient and this user is usually neglected in the planning of Brazilian libraries. These studies are essential in the development of the collection of any library and especially in relation to visually impaired users that have particularities like the level of vision, which is a determining factor for the offer of products and services, will guarantee a collection created according to with which the community in question needs in terms of information (RABELO, 1989; FIGUEIREDO, 1994; CASELLI,

2007; MALHEIROS, (2009, 2013); RADOS, VARVAKIS and BLATTMANN, 1999; MARQUEZ and DOWNEY, 2016).

An important issue that may be the solution to the questions presented is the cooperation between libraries as a means of offering a better quality service. The issue of cooperation, partnerships and decentralization of libraries services for the blind and people who do not read standard printed material are elements that will equalize these services. (RABELO (1989); GRIEBEL (2000); BERNARDI (2004); HIRSCHFELDT, 2005; KAVANAGH; SKOLD (2005, 2009)).

The future of library services for the visually impaired follows two models emerging in public and specialized libraries. One is the hybrid library model that integrates traditional and electronic services, as is the case in the UK. It would then be a "hybrid service". The other model is highly digital and technological, which is the trend in the United States. The general trends of these services go towards shared services policies between libraries for the blind, agencies and libraries, moving towards digital technology (BERNARDI, 2004).

The creation of a cooperative network of libraries for visually impaired users is pointed out by the aforementioned authors as a solution in reducing production costs, avoiding the duplication of work and making a larger number of information available. Cooperation, integration and sharing are the key words for solving the issue of access to information by people with visual impairment.

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