KOHA SOFTWARE KNOWLEDGE IN BRAZIL BY LIBRARIANS EACHERS OF PRESENT COURSES

O CONHECIMENTO SOBRE O SOFTWARE KOHA NO BRASIL PELOS PROFESSORES DE BIBLIOTECONOMIA DE CURSOS PRESENCIAIS
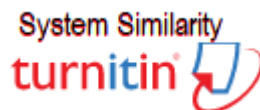
[1] Ingrid Torres Schiessl

[2] Milton Shintaku

Instituto Brasileiro de Informação em Ciência e Tecnologia[1,2]

Correspondence to Author

Ingrid Torres Schiessl
Instituto Brasileiro de Informação em Ciência e
Tecnologia
Brasília, DF - Brazil.
E-mail: ingridschiessl@gmail.com
ORCID: https://orcid.org/0000-0001-5815-2574

System Similarity
turnitin

JITA: LJ. Software.

ABSTRACT

Koha is a free library management system used worldwide by all types of libraries. However, this Integrated Library System is still little known in Brazil, which may reflect the library science students' lack of familiarity in the academic life as a large part of Brazilian university libraries use paid tools. Thus, the present study aims to analyze the degree of knowledge about Koha software by professors of the undergraduate degree in Library Science in Brazil. Therefore, a survey was sent to professors of library science programs throughout the country. Thus, it verified that 61.4% of the professors who answered the questionnaire do not know Koha. The study confirmed the hypothesis proposed to enable the creation of strategies for the dissemination of this software to professors.

KEYWORDS

Library management. Library science teaching. Libraries automation. Professors. Undergraduate degree curriculum.

RESUMO

O Koha é um sistema informatizado para gestão de bibliotecas livre utilizado em todo o mundo, por todos os tipos de bibliotecas. Entretanto, nota-se que o este Sistema Integrado de Gestão de Biblioteca ainda é pouco conhecido no Brasil, podendo ser reflexo da pouca familiaridade dos alunos de biblioteconomia na vida acadêmica, na medida em que grande parte das bibliotecas universitárias brasileiras utilizam outros sistemas, principalmente os pagos. Assim, o presente estudo tem por objetivo analisar o grau de conhecimento sobre o software Koha pelos docentes do curso de graduação em Biblioteconomia no Brasil. Para tanto, utilizou-se a técnica do survey, por meio de questionário eletrônico, enviado a docentes dos cursos de biblioteconomia em todo o país. Pode-se, dessa forma, verificar que 61,4% dos professores que responderam ao questionário não conhecem o Koha. O estudo confirmou a hipótese levantada, de forma a possibilitar a criação de estratégias para a disseminação desse software aos professores.

PALAVRAS-CHAVE

Gestão de bibliotecas. Ensino de biblioteconomia. Automação de bibliotecas. Professores. Programas de curso.

1 Introduction

To begin with, the shift from physical to digital has severely changed the role of libraries. Nevertheless, it is still the mission of these information units to manage physical collections (i.e. books and printed journals), as these publications are still a source of knowledge. As a result, libraries need to keep their primary activities in line with the new activities for publicizing information, as highlighted by Shintaku and Vidotti (2016).

Brazilian university libraries have seen a decrease in their traditional activities, as users' presence has also decreased, in the face of the digital information wave and its remote services, as reported by Costa (2012). In the same way that investments in libraries have reduced, it appears that these information systems are in need, even in more affluent cities and in countries that traditionally encourage the promotion of libraries (KLINENBERG and CHIN, 2018).

Consequently, libraries face challenges of maintaining their traditional physical collection management services and new digital ones, with an increasingly smaller budget. One of the strategies is the use of free software for services supply. The strongest focus being the use of free software DSpace for the creation of repositories and digital libraries, and in the case of university libraries, for the dissemination of theses and dissertations.

However, the presence of free software is still modest for the management of the physical collection, to such an extent that Schiessl *et al* (2016) found that the majority of Brazilian university libraries use proprietary Integrated Library Management Systems (ILMS), highlighting the use for the Pergamum software. In Brazil, the use of proprietary tools may have historical reasons, as free systems, based on the Computerized Documentation System / Integrated Set of Information System (CDS / ISIS), have become obsolete and since then there has been no other free tool, leading institutions to adhere to licensed software.

If in Brazil several institutions have joined paid software, in the world, there is a large portion that adopts Koha free software, especially public libraries in countries like Turkey and the Philippines. They have adopted Koha as an official tool for all their public libraries, becoming countries with the largest number of Koha installations (BIBLIOTECA NACIONAL, 2009; YAZICIOGLU, 2018; BREEDING, 2019).

In this context, this study aims to verify one of the possible causes of Koha minor adoption in Brazil. The hypothesis is found in the little dissemination of this tool among professors of library science in the country. Thus, as professors are not familiar with Koha, they do not pass it on to students, causing little dissemination of this tool among library professionals.

2 Undergraduate Programs of Library Science in Brazil

The history of the library science course in Brazil was born at the beginning of the 20th century, in 1911, and it was offered at the National Library of Rio de Janeiro, officially established by Decree nº 8.835 of July 11th, 1911. In this initial course, students from other courses and professionals, who were already working in libraries, were given a chance to undergraduate as librarians. Weizel (2009) reports that the course was under influence of European lines, following the teaching and professional practice model of the *École de Chartes*, in France. In 1969, the course offered by the National Library moved to the Federal University of the State of Rio de Janeiro (UNIRIO).

In Brazil, Fonseca (1974) understands that the teaching of Library Science can be divided into three phases. The first phase was when French influence prevailed and the leadership came from the National Library, from 1879 to 1929. The second one developed under the innovative influence of a course founded in São Paulo, from 1929 to 1962, with direct North American inspiration. And the third, from 1962, was characterized by the uniformity of the courses developed from the minimum curriculum. Furthermore, Mueller (1985) reports that the teaching of Library Science evolution in Brazil advanced quickly, driven by internal and external factors to the library. Nonetheless, the author claims that understanding the profession is essential in the short and medium-term, because professional responsibilities are broad and it is necessary to prepare professionals to work in situations, ranging from the most sophisticated to the most primitive.

The librarian's profession has the rights protected by law. In 1962, Law No. 4,084 was approved, which provides for the librarian and regulates the exercise of the profession and, in 1998, the exercise of the profession was updated by Law No. 9,674. The professional market offers opportunities for the occupation, especially Law 12.244 of May 24th, 2010 (Library Law), which regulates school libraries and requires the presence of librarians until 2020. This opens up a great opportunity for librarians given the number of schools in the country.

In this context, the Coordination for the Improvement of Higher Education Personnel (CAPES), promoted the creation of a bachelor's degree in library science, in the category of distance learning (DL), through the Open University of Brazil (UAB) to meet Library Law. In 2019, 589 undergraduate library science courses are registered with the Ministry of Education (MEC), in which 546 represent distance education courses and 46 in-class education courses (BRASIL, 2019). Besides, it should be noted that the e-MEC portal is regulated by Ordinance No. 21, of December 21st, 2017, as the official database of courses and Higher Education Institutions (HEIs).

For structural reasons, the history of library science courses can be divided into three stages: inception, maturation, and innovation. If at the beginning it was a pioneer in a Brazil with few higher education courses, offered by the National Library, it matured with in-class courses, mainly offered by federal universities, and now it innovates by being democratized by distance learning, which removes the space and time limitations of in-class courses.

However, there is a concern with the professionals training about new technologies, since the job market is broad when considering changes in society, and the librarian needs to be a flexible, adaptable professional connected to the needs of users or interactants (SOUZA, 2018). Therefore, the ability to adapt to the demands of contemporaneity and the new skills required for the performance of activities, such as knowledge in communication, interaction, computer, and management techniques, is important. Also, dialogues with professionals in other areas can bring more opportunities than threats.

In this respect, even if librarians do not use free or proprietary tools in their activities, they must know them mainly during their training, to enable a critical view of library management software. Koha, for instance, is little known by some librarians, even though it is the most widely used free tool in the world for library management and in 2020, it completes 20 years of existence, with constant updates, which keeps it current, even with the technological advancements.

3 Koha

First of all, Koha is free software structured in modules, which are capable of working in several daily tasks of the library, such as Circulation, User Management, Cataloging, Authorities, Acquisition, Journals, Report Creation, Tools, Administration and an online catalog. Moreover, it has an active international community where questions about functionality, errors, use and new tools developed are discussed, shared and debated to achieve a better software performance (SCHIESSL; BRASILEIRO; MACEDO, 2019).

Schiessl, Brasileiro, and Macêdo (2019) report that Koha was first implemented in the Horowhenua Library Trust in New Zealand, and the fact that it has open-source contributed to its dissemination in the years following its implementation. The authors state that with the system use growth, there is also an expansion of its support network, characterized mainly by the mutual help of its users.

Koha is the most widely used free software for libraries worldwide, countries such as Turkey and the Philippines, for example, adopt Koha in all their public libraries (SCHIESSL *et al*, 2017). The authors Yang and Hoffman (2010) consider Koha to be the most advantageous among free software since it meets most of the technical criteria. In less developed countries, Koha proves to be an option for being free. The authors Egundjobi and Awoyemi (2012) analyze the tool use in Nigeria and point out that there is satisfaction with the software by the team of librarians. Anuradha, Sivakaminathan and Arun Kumar (2011) show that Koha can be integrated with other free software, to expand the services offered, especially the integration with functionalities aimed at managing digital full texts.

Another aspect discussed is data migration. The author Walls (2011) points out that migration to Koha does not present any major problems, as the tool uses the MARC standard. However, the author states that all data migration requires attention because it is common to

find some difficulties and challenges during the information transfer process.

Despite being created for a public library, Koha is versatile and can be used in other types of libraries. In Brazil, Fernandez (2013) presented the use of Koha in public libraries, while Figueiredo (2015) presented it in a school library. In Portugal, Amante and Marçal (2012) report the use of software in university libraries. Koha presents itself as software adaptable to different types of libraries, thus being an option of technological solutions for the librarian universe. Despite the flexibility, in Brazil, the Brazilian Institute of Information in Science and Technology presents on its wiki page a list of only eight institutions that use Koha software, and there is no other platform in the country that performs the counting of institutions that use this tool.

4 Methodology

This study aims to verify the reasons for the low use of Koha in Brazil. Since it is the most widely used free tool in the world, but in Brazil, it is little used. In this sense, the present study can be classified as descriptive, as it seeks to describe a phenomenon, through the study of variables, in line with the concepts presented by Gil (2008). Thus, the study raises quantitative variables such as the number of professors who know Koha or who use it as a teaching support tool.

For the approach, the study has mixed aspects, since the approaches complement each other, with the collection of quantitative data and predominantly qualitative analysis. This mixed approach is in line with Creswell's (2010) proposals.

At this point, the data collection technique used is the survey, which enables to integrate the collection of quantitative and qualitative variables. Thus, multiple-choice or selection questions, which look for frequency (quantitative), and open questions in which they can be answered freely (qualitative), compose an online questionnaire to be answered by librarian science professors of courses offered in Brazil, according to the research objectives. Moreover, the open questions were of the short answer type, with only the first two questions being answered by all participants, those are: **What institution do you work**? and **For how long have you been teaching?**. The other two questions depended exclusively on the participant's answer, whoever answers question three does not answer number four and vice versa. The open question number three, depended on the multiple-choice answer number three, which questioned whether the professor was aware of the ILMS, if not, it was possible to send the contact information to receive more information (the question is: **By what means would you like to obtain information?** (**Indicate contact information**). While, the last question is intended for the professor to inform the name of the discipline, in which the Koha software is used, in order to enable and verify the scenario about the knowledge of this ILMS in the teaching of library science.

Besides, the online questionnaire was developed in a simple way to be answered in an average of three minutes, composed of five sections. Not all respondents will go through all the questions. The positive answers lead to other questions, to verify the knowledge of the professors about Koha.

The study is restricted to professors of in-class courses, as many institutions offer in-class and distance learning, some professors participate in both modalities. In 2019, 589 undergraduate library science courses are registered with the Ministry of Education (MEC), in which 546 represent distance education courses and 46 in-class education courses (BRASIL, 2019). In-class courses are more traditional and acted in the training of most professionals, since the CAPES EAD library science course has started in 2018, they still do not have majored professionals. The e-MEC portal was used, as it is the official database of courses and Higher Education Institutions (HEIs).

From 410 professors identified on institutional websites of in-class courses, only 107 professors provided their email addresses. It is important to highlight that, from the list of teachers, it was possible to identify four teachers who occupied the coordination position; therefore, the e-mail provided was that of the coordination, these teachers have likely forwarded the questionnaire to other teachers. Also, the questionnaire was public; anyone with access to the link could answer it. The teachers themselves could have forwarded it to colleagues, as some of them were not reached by the authors of this study. Finally, 70 responses were obtained between the periods March 14th, 2019 and July 1st, 2019.

5 Results

The study started by surveying the in-class courses in library science through the e-MEC Portal. On the platform there are 47 in-class courses in library science, which 4 courses are in the process of deactivation, extinction and / or voluntary disqualification, thus the total is 43 in-class courses in library science. Moreover, it is observed that not all Brazilian states offer in-class courses in library science, such as Acre, Amapá, Mato Grosso do Sul, Roraima, and Tocantins. On the other hand, São Paulo is the state that most offer in-class courses, with eight institutions offering the course. These data reveal a certain deficiency in the offer of courses in the country, when compared to other in-class courses, such as law, engineering, and medicine, but it justifies the promotion of CAPES to the distance course in library science by UAB.

Public universities stand out in the librarians' training in-class mode, with federal universities occupying 61% of institutions. Five State Universities also offer courses, especially the University of São Paulo (USP) and the São Paulo State University "Júlio de Mesquita Filho" (UNESP). The teaching staff is composed of renowned professors, all with a Ph.D. degree, besides being among the best universities in the country.

In the present study, 70 responses were received from March 14, 2019, to July 1, 2019, with professors from all institutions offering the in-class course in library science invited by e-

mail directly to teachers and coordinators of course. The answers came from 23 institutions, in a total of 65 answers, and the Federal University of Paraíba (UFPB) was the one that most participated, with 15 answers and; seven institutions answered only once, that is, only one professor answered the questionnaire.

As for teaching time, there are varied responses, from professors with 40 years of teaching experience to novices with less than one year. Nine respondents stated that they have been working for 10 years, the highest number. However, 55 respondents have been working less than five years, revealing a sample of new professors, still with little experience, possibly open to the use of new technologies, since lately there is a great demand for tools in libraries.

The characterization of data reveals that the survey respondents are mostly professors with up to five years of teaching, linked to 22 educational institutions located in several Brazilian states. These results may suggest that professors with more recent experience are more willing to take surveys, by answering online questionnaires. Nevertheless, this point requires more in-depth studies, since it can refer to familiarity with technology, availability of time, among many other factors.

As for knowledge about the ILMS Koha, it was found that 62.8% of respondents are unaware of this system and only 37.1% know it, revealing little dissemination of the tool among professors. However, almost a third of the professors who answered that they did not know Koha, would like to have more information about the tool. This evidence seems to reflect Koha's little participation in the academic life of professors, since, as presented by Marques and Saldanha (2018), technology is one of the axes of library science and information science study. Thus, it may be that other tools are better known for being part of libraries and teacher training courses, as is the case with the Pergamum tool, which Schiessl *et al* (2016) found to be the most used in university libraries.

The lack of knowledge about various library management tools may be related to what Madureira and Vilarinho (2010) report as the lack of support from the computer sector for the library. It is noteworthy that to teach management tools; the library science course needs computer labs with the support of the university's computer team.

Regarding Koha, for the respondents who claimed to know the tool, most of them only heard about it (Chart 1). However, professors had the opportunity to teach something about Koha through training / class.

Chart 1. How do you categorize your knowledge on Koha?
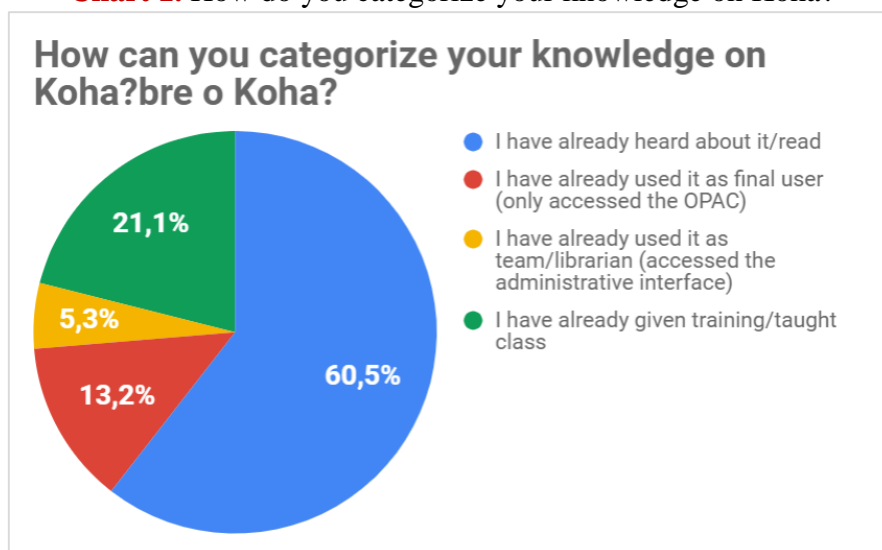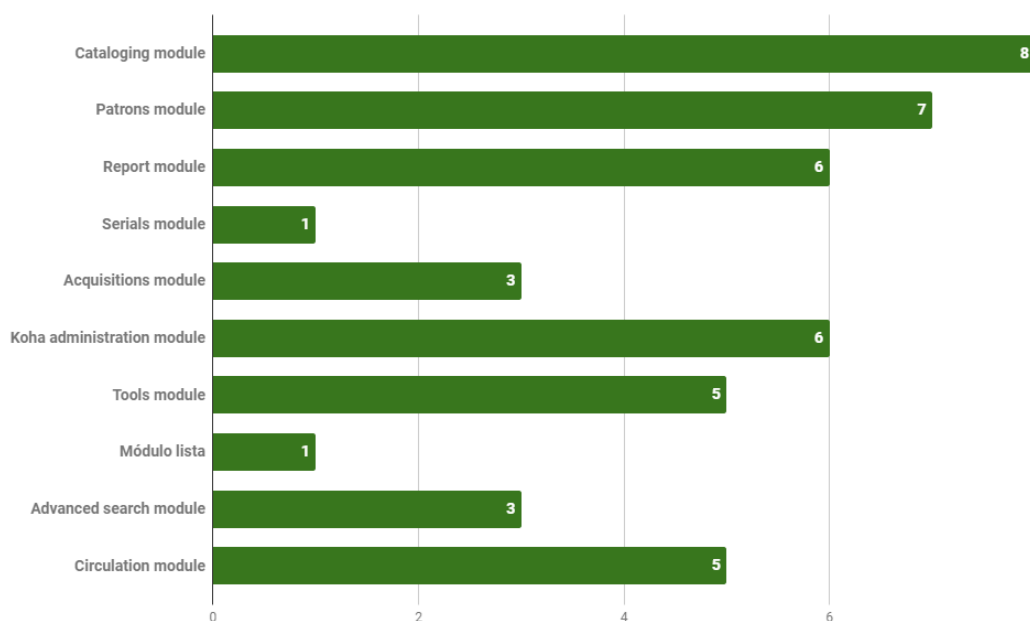

Source: Authors' own elaboration (2019).

Only ten professors answered that they had already taught classes with Koha as content. Therefore, when asked about how the class was taught, eight answered that they had applied practical training. This sign seems promising, even with a small amount, the professors who know the tools offer practical training, which can be inferred that Koha can be a good didactic tool for the training of librarians.

Concerning Koha modules, the most used in training (Chart 2) is the cataloging module, being natural, since technical processing is part of librarians' tasks. Cataloging, collaboratively or not, is a common activity in libraries and Koha implements all functionalities for technical processing.

Chart 2. How do you categorize your knowledge on Koha?

Source: Authors' own elaboration (2019).

Another point observed is the journal module, which is not widely used in practical training offered by professors. This fact may be related to the fact that journals are increasingly consolidated on digital media, as stated by Meadows (2001). In the case of Koha software, the journal module was created to manage subscriptions of printed journals (SCHIESSL *et al*, 2017). As Shintaku and Vidotti (2016) argue, librarians need to have greater knowledge about the publicization of digital content, since the information in this medium is becoming more common.

The results of this study, even though they are part of the community of professors of in-class courses in library science, find parallels with what Souza and Fujino (2009) report regarding the challenges in the training of librarians about technology. Koha is not a very new technology, as it was created in 2000, but it is still little known by the Brazilian professors participating in the research, despite presenting advantages for being free software, aligned with trends such as Open Science.

Even though the results of the study are a part of the community of library science professors working in the country, it may show signs that the lack of knowledge on the part of professors about Koha is a factor of the little use of this software in libraries. Another important point is the little technical literature on the tool in Portuguese, which professors can use as teaching material. The Koha User Guide published was published by the Brazilian Institute of Information in Science and Technology only in 2017.

6 Final Remarks

The training of professionals, even if it does not end at the end of a course, is important in several aspects. Much knowledge about the profession is guaranteed during the academic path. Thus, the present study aimed to verify whether the low use of Koha, in Brazil, was due to the lack of knowledge of library science professors. The results showed evidence that this relationship may be valid, given the little knowledge of the students who participated in the study.

The academic and professional training of the librarian faces challenges with new technologies, so much so that Madureira and Vilarinho (2010) discuss the issue of digital libraries; which are not included in the course, but are a reality in professional life. Araújo (2018) defends a change in the teaching of library science in the face of the challenges imposed by technology, though he admits that certain traditional studies should be maintained, as the discipline is plural. Consequently, maintaining the teaching of activities aimed at the management of physical collections, through a computerized tool, is still a current topic and should be improved with new technologies addition.

In this context, the present study points out evidence that relates the little familiarity of library professors with the Koha tool, which may influence the training of new library professionals. In the same way that most professors do not know Koha, most library science courses are offered by public institutions that use paid tools, reducing the possibility of students'

contact with Koha.

On the other hand, a great part of the users who declared they knew Koha, used it as a didactic resource to teach classes, which can be a good sign. Therefore, it can be said that there is a lack of good dissemination of Koha in library science courses and events in the area, with actions aimed especially at professors, to meet the portion that is not familiar with the tool.

Thus, it is noted that the inclusion of Koha in the curricula of library science courses can strengthen the user community in Brazil, as it is free software, consistent with the guidelines of open science and government indication, specified by Normative Instruction nº 04 (IN04), which deals with the contracting of software licenses. Moreover, it meets the needs of managing the physical collection, in traditional library services.

The tradition of the library cannot be relegated as custodian of printed knowledge. Silva and Cunha (2002), discussing the training of 21st-century librarians, argue that it is necessary to humanize teaching, in order to have professionals more suited to the use of technology and to mediate information. Technology should be used as a tool, having its space in activities, in which librarians must add new services, but maintaining traditional ones, with Koha as one of the options.

References

AMANTE, Maria João; MARÇAL, Bruno. Dinâmicas de implementação de software open source numa Biblioteca Universitária: o caso do ISCTE-IUL. *In*: CONGRESSO NACIONAL DE BIBLIOTECÁRIOS, ARQUIVISTAS E DOCUMENTALISTAS, 11., 2012, Lisboa. **Anais** [...]. Lisboa: Associação Portuguesa de Bibliotecários, Arquivistas e Documentalistas (BAD), 2012. Disponível em: https://www.bad.pt/publicacoes/index.php/congressosbad/article/view/417. Acesso em 31 jul. 2019.

ANURADHA, K. T.; SIVAKA MINATHAN, R.; ARUN KUMAR, P. Open-source tools for enhancing full-text searching of Opacs: use of Koha, Greenstone and Fedora. **Program:** Electronic Library and Information Systems, v. 45, n.2, p. 231-239, 2011. Disponível em: https://www.bad.pt/publicacoes/index.php/congressosbad/article/view/417. Acesso em 31 jul. 2019.

ARAÚJO, Carlos Alberto Ávila. Biblioteconomia: fundamentos e desafios contemporâneos. **Folha de Rosto**, v. 3, n. 1, p. 68-79, 2018. Disponível em: http://www.brapci.inf.br/index.php/res/download/52697. Acesso em 31 jul. 2019.

BIBLIOTECA NACIONAL (Filipinas). Country reports: National Library of the Philippines. *In:* CONFERENCE OF DIRECTORS OF NATIONAL LIBRARIES IN ASIA AND OCEANIA (CDNLAO), 17., 2009, Hanoi, Vietnã. **Relatórios** [...]. Tóquio: National Diet Library, 2009. Disponível em: https://www.ndl.go.jp/en/cdnlao/meetings/2009.html Acesso em: 31 jul. 2019..

BRASIL. **Cadastro e-MEC**: cadastro nacional de Cursos e Instituições de Educação Superior. 2019. Disponível em: http://emec.mec.gov.br/. Acesso em 31 jul. 2019.

BREEDING, M. **Map of Libraries**: the library automation system used is Koha. Disponível em: https://librarytechnology.org/libraries/map.pl?ILS=Koha. Acesso em: 31 jul. 2019.

CHAUHAN, Kaushal. Evaluation in use of KOHA Library Management Software in OPJGU, Sonipat. **Library Philosophy and Practice**, p. 1-13, 2018. Disponível em: https://digitalcommons.unl.edu/libphilprac/2070/. Acesso em 31 jul. 2019.

COSTA, Maira Murrieta. As bibliotecas brasileiras em 2018: resultados da técnica de delfos. **Perspectivas em Ciência da informação**, v. 17, n. 1, p. 74-93, 2012. Disponível em: http://portaldeperiodicos.eci.ufmg.br/index.php/pci/article/view/1363. Acesso em 31 jul. 2019.

CRESWELL, John W. **Projeto de pesquisa:** métodos qualitativo, quantitativo e misto. Porto Alegre: Artmed: 2010. 296 p.

EGUNJOBI, R. A.; AWOYEMI, R. A. Library automation with Koha. **Library Hi Tech News**, v. 29, n. 3, p. 12-15, 2012.

EYLER, Pat. Koha: a gift to libraries from New Zealand. **Linux Journal**, v. 2003, n. 106, 1 fev. 2003. Disponível em: https://www.linuxjournal.com/article/6350. Acesso em 31 jul. 2019.

FERNANDEZ, Rafael Saad. O uso de softwares livres na gestão pública de acervos informacionais: o caso do Koha nas bibliotecas de São Bernardo do Campo. **Informação & Informação**, v. 18, n. 2, p. 231-248, 2013. DOI: 10.5433/1981-8920.2013v18n2p231. Disponível em: http://www.uel.br/revistas/uel/index.php/informacao/article/view/16174. Acesso em 31 jul. 2019.

FERNÁNDEZ-ALFARO, Leonor; MÁRQUEZ-PÉREZ, Aurora; CHAMORRO-RODRÍGUEZ, Ricardo. Implementación de Koha en la Biblioteca de la Universidad de Cádiz. **El profesional de la información (EPI)**, v. 27, n. 4, p. 928-936, 2018. Disponível em: http://www.elprofesionaldelainformacion.com/contenidos/2018/jul/21.pdf. Acesso em 31 jul. 2019.

FIGUEIREDO, Marcia Feijão de. Análise do aplicativo Koha no Colégio Pedro II: um relato de experiência. **RDBCI**: Revista Digital de Biblioteconomia e Ciência da Informação, v. 13, n. 3, p. 653-665, 25 set. 2015. DOI: 10.20396/rdbci.v13i3.2125. Disponível em: https://periodicos.sbu.unicamp.br/ojs/index.php/rdbci/article/view/2125. Acesso em 31 jul. 2019.

GIL, Antonio Carlos. **Métodos e técnicas de pesquisa social**. 6. ed. São Paulo: Atlas, 2008. 216 p.

KLINENBERG, Eric; CHIN, Credit Louie. To restore civil society, start with the library. **The New York Times**, v. 8, 2018. Disponível em: https://www.nytimes.com/2018/09/08/opinion/sunday/civil-society-library.html. Acesso em 31 jul. 2019.

MADUREIRA, Helania Oliveira; VILARINHO, Lúcia Regina Goulart. A formação do bibliotecário para atuar em bibliotecas virtuais: uma questão a aprofundar. **Perspectivas em Ciência da Informação**, v. 15, n. 3, p. 87-106, 2010. Disponível em: http://portaldeperiodicos.eci.ufmg.br/index.php/pci/article/view/1077. Acesso em 31 jul. 2019.

MARQUES, Tathiane Amaral; SALDANHA, Gustavo Silva. Saberes e fazeres em transformação: a produção do conhecimento em Biblioteconomia e Ciência da Informação no Brasil a partir dos anais de eventos científicos dos anos 1970. **RBBD:** Revista Brasileira de Biblioteconomia e Documentação, v. 14, p. 110-138, 2018. Disponível em: https://rbbd.febab.org.br/rbbd/article/view/1082. Acesso em 31 jul. 2019.

MEADOWS, Jack. Os periódicos científicos e a transição do meio impresso para o eletrônico. **Revista de Biblioteconomia de Brasília**, Brasília, v. 25, n. 1, p. 5-14, 2001. Disponível em: http://www.brapci.inf.br/_repositorio/2010/10/pdf_29f176742d_0012269.pdf. Acesso em 31 jul. 2019.

MUELLER, Suzana Pinheiro Machado. O ensino de biblioteconomia no Brasil. **Ciência da Informação**, v. 14, n. 1, 1985. Disponível em: http://revista.ibict.br/ciinf/article/view/222. Acesso em 31 jul. 2019.

SCHIESSL, Ingrid Torres; BRASILEIRO, Italo Barbosa; MACÊDO, Diego José. Koha: Sistema de Biblioteca da SNJ. *In*: SHINTAKU, Milton; BRITO, Ronnie Fagundes de; BARCELOS, Janinne (org.). **Soluções Tecnológicas para Gestão do Conhecimento sobre Juventude**. Brasília: Ibict, 2019.p. 65 - 76. Disponível em: http://livroaberto.ibict.br/handle/123456789/1078. Acesso em 31 jul. 2019..

SCHIESSL, Ingrid Torres *et al*. Cenário Brasileiro dos catálogos on-line das bibliotecas universitárias federais. **Revista Conhecimento em Ação**, n. 2, v. 1, p. 111-126, jul./dez. 2016. Disponível em: https://revistas.ufrj.br/index.php/rca/article/view/111/7153. Acesso em: 04 jul. 2019.

SCHIESSL, Ingrid Torres *et al*. Implantação do sistema de gestão de biblioteca Koha na biblioteca de juventude da SNJ. *In*: CONGRESSO BRASILEIRO DE BIBLIOTECONOMIA E DOCUMENTAÇÃO, 27., 2017, Fortaleza. **Anais** [...]. Fortaleza: Febab, 2017. Disponível em: https://portal.febab.org.br/anais/article/view/1986. Acesso em: 04 jul. 2019.

SHINTAKU, Milton; VIDOTTI, Silvana Aparecida Borsetti Gregorio. Bibliotecas e repositórios no processo de publicação digital. **BIBLOS**, [S.l.], v. 30, n. 1, p. 61-80, nov. 2016. ISSN 2236-7594. Disponível em: https://periodicos.furg.br/biblos/article/view/5762. Acesso em: 04 jul. 2019.

SILVA, Edna Lúcia da; CUNHA, Miriam Vieira da. A formação profissional no século XXI: desafios e dilemas. **Ciência da informação**, v. 31, n. 3, 2002. Disponível http://revista.ibict.br/ciinf/article/view/950. Acesso em: 31 jul. 2019.

SOUSA, Margarida Maria de; FUJINO, Asa. A biblioteca universitária como ambiente de aprendizagem no ensino superior: desafios perspectivas. In: ENCONTRO NACIONAL DE PESQUISA EM CIÊNCIAS DA INFORMAÇÃO, 5., 2009, João Pessoa. **Anais** [...] . João Pessoa: ENANCIB, 2009. p. 1780 - 1798. Disponível

http://enancib.ibict.br/index.php/enancib/xenancib/paper/viewFile/3278/2404. Acesso em: 31 jul. 2019.

SOUZA, Katyusha Madureira Loures de. Mercado de trabalho do bibliotecário do século XXI. *In*: RIBEIRO, Anna Carolina Mendonça Lemos; FERREIRA, Pedro Cavalcanti Gonçalves (org.). **Bibliotecário do século XXI**: pensando o seu papel na contemporaneidade. Brasília: Ipea, 2019. p. 83-96. Disponível em: http://repositorio.ipea.gov.br/handle/11058/8298. Acesso em: 04 jul. 2019.

WALLS, Ian. Migrating from Innovative Interfaces' Millennium to Koha: the NYU Health Sciences Libraries' experiences. **OCLC Systems & Services**: International Digital Library Perspectives, v. 27, n. 1, p. 51-56, 2011. DOI: 10.1108/10650751111106564. Disponível em: https://www.emerald.com/insight/content/doi/10.1108/10650751111106564/full/html. Acesso em: 04 jul. 2019.

WEITZEL, Simone da Rocha. **Origem e fundamentos do processo de desenvolvimento de coleções no Brasil**: estudo de caso da Biblioteca Nacional. *In*: ENCONTRO NACIONAL DE PESQUISA EM CIÊNCIAS DA INFORMAÇÃO, 5., 2009, João Pessoa. **Anais** [...] . João Pessoa: ENANCIB, 2009, [sem paginação]. Disponível em: http://enancib.ibict.br/index.php/enancib/xenancib/paper/viewFile/3278/2404. Acesso em: 31 jul. 2019.

YANG, Sharon Q.; HOFMANN, Melissa A. The next generation library catalog: a comparative study of the OPACs of Koha, Evergreen, and Voyager**. Information Technology and Libraries**, v. 29, n. 3, p. 141, 2010. Disponível em: https://ejournals.bc.edu/ojs/index.php/ital/article/viewFile/3139/27. Acesso em: 31 jul. 2019.

YAZICIOGLU, Mengu. Koha usage in large and branched libraries. 2018. 1 video (26 min). Publicado pelo canal ByWater Solution. Disponível em: https://www.youtube.com/watch?v=z_0Wl-dWlkA&list=PLV_OXyJ1D3BgcRtxrjVkCBXjSt7Dr1qKy&index=21&t=0s. Acesso em. 31 jul. 2019.