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KNOWLEDGE MANAGEMENT IN THE CONTEXT OF ACADEMIC LIBRARIES: THE STATE OF THE ART IN BRAZILIAN STUDIES

GESTÃO DO CONHECIMENTO NO CONTEXTO DAS BIBLIOTECAS UNIVERSITÁRIAS: O ESTADO DA ARTE NOS ESTUDOS BRASILEIROS

GESTIÓN DEL CONOCIMIENTO EN EL CONTEXTO DE LAS BIBLIOTECAS UNIVERSITÁRIAS: EL ESTADO DEL ARTE EN LOS ESTUDIOS BRASILEÑOS

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Abstract: The objective is to identify and analyze, based on the state of the art, how Knowledge Management (KM) has been approached in university libraries. This is a bibliographic search, based on theses, dissertations and papers available in the Digital Library of Theses and Dissertations of the Higher Education Personnel Improvement Coordination, as well as in the Journal Portal, from 2009-2018. We found 13 papers (dissertations and theses), of which 6 were selected due to their proximity to the research theme. In the Journal Portal were recovered 584 papers that, after a "floating reading", were selected 9. The results show that Knowledge Management has been approached through comparative study, instrument proposition to diagnose or manage information and knowledge in an integrated way, experience reports on Knowledge Management practices, among others. However, in most of the investigated institutions, KM is adopted in a non-systematic way, decreasing it effectiveness.

Keywords: Knowledge Management. Academic Libraries. State of the Art.

Resumo: Objetiva-se identificar e analisar, a partir do estado da arte, como a Gestão do Conhecimento (GC) vem sendo abordada nas bibliotecas universitárias. Trata-se de uma pesquisa bibliográfica, baseada em teses, dissertações e artigos disponíveis na Biblioteca Digital de Teses e Dissertações da Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, bem como no Portal de Periódicos, no ínterim 2009-2018. Encontraram-se 13 trabalhos (dissertações e teses), dos

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quais 6 foram selecionados em função da proximidade com a temática da pesquisa. No Portal de Periódicos foram recuperados 584 artigos que, após a “leitura flutuante”, restaram selecionados 9. Os resultados apontam que a Gestão do Conhecimento vem sendo abordada através de estudo comparado, proposição de instrumento para diagnosticar ou gerenciar informação e conhecimento de forma integrada, relatos de experiências sobre práticas de gestão do conhecimento, entre outros. Entretanto, na maioria das instituições investigadas, a GC é adotada de maneira não sistematizada, diminuindo a sua efetividade.

Palavras-chave: Gestão do Conhecimento. Bibliotecas Universitárias. Estado da Arte.

Resumen: Se objetiva identificar y analizar, con base en el estado del arte, cómo se ha abordado la Gestión del Conocimiento en las bibliotecas universitarias. Esta es una investigación bibliográfica basada en tesis, disertaciones y artículos disponibles en la Biblioteca Digital de Tesis y Disertaciones de la Coordinación para el Mejoramiento del Personal de Educación Superior, así como en el Portal de Periódicos, en el período intermedio 2009 y 2018. Se encontraron 13 trabajos (disertaciones y tesis), de los cuales 6 fueron seleccionados debido a su proximidad al tema de investigación. En el Portal de revistas, se recuperaron 584 artículos, que, después de "lectura flotante", se seleccionaron 9. Los resultados muestran que la Gestión del Conocimiento se ha abordado a través del estudio comparativo, propuesta de instrumento para diagnosticar o gestionar información y conocimiento de manera integrada, informes de experiencias sobre prácticas de gestión del conocimiento, entre otros. Sin embargo, en la mayoría de las instituciones investigadas, el KM se adopta de manera no sistemática, lo que reduce su efectividad.

Palabras clave: Gestión del Conocimiento. Bibliotecas Universitarias. Estado del Arte.

1 INTRODUCTION

Contemporary society is marked by sharp speed at which knowledge is being disseminated, which is the primary resource for individuals and for organizations.According to Hoffmann (2009), knowledge can be described as something valuable, dynamic, always changing, which strengthens innovation and the renewal of human actions.

Given the importance of knowledge to organizations, there is a need to find a way to manage it, so that it can be used for decision making and for improving the quality of products and services.In this context, Knowledge Management emerges, which can be understood as the set of activities related to the generation, codification and transfer of knowledge (DAVENPORT; PRUSAK, 1998).

KM can be adopted both within private organizations, as knowledge represents a valuable resource for sustaining the competitiveness of organizations (PROBST; RAUB; ROMHARDT, 2000), as in public institutions, as it enables managers to create, collect, organize and share knowledge for decision making and public policy management (BATISTA, 2004).

Among the various types of organizations are academic libraries, whose objectives and purposes are related to the dissemination of information and the pursuit of meeting the new demands of the university community (MACIEL; MENDONÇA, 2006). In the midst of these demands, we highlight the availability of information with speed, accuracy and reliability (indispensable for researchers, teachers and students to develop their work and research). In addition, academic libraries also provide specialized services, assuming an "educational" role with users, enabling them to use quality information retrieval technologies (BEM; COELHO, 2016). This scenario has caused changes in the way libraries operate, including the way they manage their employees' intellectual capital in order to better meet the new demands.

In this context, it is considered relevant to know and map the available scientific studies on the subject. Thus, the aim of this paper is to analyze how the KM theme, related to the context of academic libraries, has been approached in empirical studies in the Brazilian academic literature. Therefore, besides this introduction, the paper was structured in four other sections: theoretical review on KM and on characteristics of academic libraries; methodology used in the study; analysis and discussion of results; and, finally, final considerations.

2 REVIEW OF RELATED LITERATURE

2.1 KNOWLEDGE MANAGEMENT: CONCEPTUAL ASPECTS

Knowledge Management is a practice that gained strength in the late 1980s, especially in the literature related to the management of private organizations. Discussions on this topic sought to find a way to manage human and intellectual capital in organizations, with the purpose of transforming individual knowledge into organizational knowledge.

In the late 1990s, authors such as Nonaka and Takeuchi (1995), Sveiby (1998), Davenport and Prusak (1998), among others, deepened the theme "KM" in the organizational sphere, becoming referenced in research that addresses the subject. During this period, KM presented two distinct approaches: one related to information management (through the predominance of the use of Information Technology), and the other to people management (predominantly in the social sciences) (STRAUHS, 2003). These two conceptions subsidized KM in the early 21st century.

Currently, the understanding on this theme has been broadened, considering it as a systemic process, dependent on technologies, strategies and people (STRAUHS, 2003). To understand KM, it

is important to distinguish between elements that make up this process: data, information and knowledge.

According to Davenport and Prusak (1998), data refer to a set of distinct and objective events-related facts, which in an organizational context can be described as structured transaction records. However, it should be noted that the data or data set cannot be understood as information. The transformation of data into information requires the following processes to occur:

> •Contextualization: We know the purpose of the collected data;
> •Categorization: We know the units of analysis or the essential components of the data.
> •Calculation: data are arranged so that they can be analyzed mathematically or statistically;
> •Correction: errors are eliminated from the data;
> •Condensation: Data can be summarized to a more concise form (DAVENPORT; PRUSAK, 1998, p.5)

Therefore, when data is grouped so that conclusions can be drawn about it, it is information. According to Davenport and Prusak (1998), information is intended to change the way the recipient observes something; it has some impact on your judgment and behavior. That is, information can be understood as a data set with relevance and purpose. Regarding knowledge, it refers to experiences, beliefs, intuition and rationality, and an organization cannot generate knowledge without the intervention of individuals (NONAKA; TAKEUCHI, 1995). Still, knowledge can be conceptualized as:

> Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms (DAVENPORT; PRUSAK, 1998, p. 5).

As is evident, knowledge exists within people and is therefore difficult to write; it is presented in tacit form. From this differentiation, data is information without context; Information relates to meaningful data that has been analyzed and, finally, knowledge is the result of a combination of information, context and individual experience.

In addition, as Nonaka and Takeuchi (2008) describe, knowledge is formed by two dichotomous and apparently opposite components: tacit knowledge and explicit knowledge. Explicit knowledge can be expressed in words, numbers or sounds, and shared in the form of data, scientific formulas, visuals, audio, product specifications or manuals, and can be transmitted to individuals

(formally and systematically). Tacit knowledge, in turn, is not visible, but explicable, as it is personal and difficult to formalize; it is rooted in the actions, experiences, ideals, values, and emotions of individuals.

According to Nonaka and Takeuchi (2008), from the interaction between tacit and explicit knowledge occurs the creation of organizational knowledge. For these authors, this occurs through four processes of knowledge transformation: socialization, externalization, combination and internalization.

Socialization is "a process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical skills" (NONAKA; TAKEUCHI, 2008, p. 54). The process of articulating tacit knowledge into explicit concepts, in which tacit knowledge can be translated through metaphors, analogies, hypotheses, or models, is called *Externalization*.

Combination is a process of systematization of concepts in a knowledge system that involves the combination of various explicit knowledge. It can occur through documents, meetings, telephone conversations or computerized communication networks (NONAKA; TAKEUCHI, 2008). The last stage of the process of knowledge transformation comprises *Internalization*. It occurs by converting explicit knowledge into tacit knowledge and, according to the authors, refers to "learning by doing." The continuous and dynamic interaction between tacit and explicit knowledge creates organizational knowledge (NONAKA; TAKEUCHI, 2008).

According to Jorge and Sutton (2016), creating new knowledge has become fundamental in the context of organizations. This is due to the understanding that knowledge creation provides organizations with competitive advantages. In this context, the set of ordered and systematized efforts aimed at creating new knowledge, disseminating it in the organization to those who need it and incorporating it into products and services, can be defined as KM (LACOMBE; HEILBORN, 2008).

From the perspective of Angeloni (2008), KM is composed of three interacting and interdependent dimensions: organizational infrastructure, people and technology. The dimension *organizational infrastructure* is formed by all the elements that support the maintenance and continuity of the organization (Angeloni, 2008). This dimension includes beliefs, principles, posture, managerial style, structure and organizational culture, among others. The *people* dimension consists of the learning variables, related to the change in the person's behavior, the incorporation of new habits, attitudes, knowledge and skills; mental models, which are responsible for the way of understanding and acting in the world. Finally, KM is represented by the *technology* dimension, which is related to the use of computers, networks (internet, intranet and extranet) and software

that have the function of storing, retrieving and disseminating knowledge, both those accumulated as those that are still in development stage.

2.2 THE ACADEMIC LIBRARY: LEARNING SPACE AND KNOWLEDGE CONSTRUCTION

The academic library plays an important role in the higher education context, because the authorization and functioning of higher education courses in Brazil depend on their efficient functioning and your quality. Since Law No. 10,861 of April 14, 2004, which established the National Higher Education Evaluation System - SINAES, different institutional dimensions have become the object of evaluation, including libraries. However, in addition to the legal requirements, it is important to note that the library also develops a pedagogical function, which has been made possible through changes in the role of academic libraries over time. In this regard, it should be remembered that in the past, libraries were solely intended to preserve their collections. Only from the nineteenth century the collections of some institutions began to be open to the university community (HUBNER; KUHN, 2017).

With access to the library, and also the freedom of people to remain in these spaces, a new role is beginning to be assigned to these organizations. Libraries are now considered educational spaces and knowledge construction, since their users (in their study, research and reading routines) build and expand their knowledge. Therefore, the academic library, as an organ linked to a higher education institution, represents more than an architectural space. It “is a place of dialogue with the past, of creation and innovation, and conservation has meaning only as a leaven of knowledge and a motor of knowledge, at the service of the whole community” (BARATIN; JACOB, 2008, p. 9).

Currently, it is not enough for the librarian to have only the technical competence (catalog, classify, index). It becomes necessary to interact directly with the user, from information intermediary to informational and pedagogical mediator, also incorporating new positions such as leadership and educational agent of transformation (DUDZIAK, 2003).In the same vein, Bufrem and Sorribas (2008) argue that the academic library canno't only be perceived as a guardian or disseminator of knowledge, but should invest in an investigative culture, with an emphasis on learning and not just on teaching and information transfer.

Based on these assumptions, the tendency is that the academic library will increasingly have to act as a promoter of users' informational competence. This competence can be understood as a process of appropriation and development of knowledge, skills, attitudes and values in relation to

the procedure of accessing, evaluating, interpreting and critically and ethically using information (GODINHO, GONÇALVES; ALMEIDA, 2015).

In this sense, it is clear that besides being responsible for the management and conservation of information heritage, the academic library must play an active role in the educational process of the academic community. For this, it's necessary a proper administration (DZIEKANIAK, 2009). Likewise, it is necessary that the library has a qualified staff, according to its objectives and the objectives of the university to which it belongs. After all, a library's success depends on its staff's ability to use its knowledge to serve the user community, while managing the processes of knowledge creation, dissemination, and possible exploitation (MAROUF, 2017).

Considering this scenario, it can be described that, in knowledge organizations (such as libraries), KM can contribute to users management (their needs, who to contact for information), resource management (sources, services, and where these services are available) and the practical management of people (available expertise, the quality of service they provide) among others (Islam, Agarwal & Ikeda, 2017). In other words, KM is configured as a dynamic and circular process "that involves all organizational processes, seeking to map existing knowledge, [...] with the aim of obtaining the best organizational performance" (HOFFMANN, 2009, p. 30). In this context, it is important to highlight that the academic library can use KM, since it enables the establishment of structured channels for the exchange of information and knowledge between employees and users (this optimizes work processes and improves the quality of the services offered).

3 METHOD

This study was characterized as a bibliographic research, which, according to Gil (2002), is developed based on material published in books, magazines, newspapers, electronic networks, etc. For this, a survey of the scientific production on the KM theme was carried out, which can also be called "state of the art" or "state of knowledge". The state of knowledge comprises the identification, registration and categorization that lead to reflection and synthesis on the scientific production of a particular area, in a given space of time, through articles, dissertations, theses and books on a specific theme (MOROSINI; FERNANDES, 2014).

In this context, it was made a cut of the scientific production of the last ten years, comprising theses, dissertations and articles, in order to analyze how this theme has been approached in empirical studies within the academic libraries. Initially, the search was performed in the CAPES Digital Library of Theses and Dissertations (BDTD in Portuguese). In addition to theses and

dissertations, the state of the art on KM in academic libraries was complemented by the search for national articles published on the CAPES Journal Portal, through the search strategies described in Chart 1.

Chart 1 - Search strategies for identification of theses, dissertations and articles

Search strategy	**For thesis and dissertations**	**For articles**
Data base	Digital Library of Theses and Dissertations (BDTD – CAPES)	All databases available on the CAPES Journal Portal
Keywords	"Knowledge Management" OR "Information Management" AND "Academic Library" *(in Portuguese: "Gestão do Conhecimento" OR "Gestão da Informação" AND "Biblioteca Universitária")*	
Language	Portuguese	
Publication date	2009 to 2018	
Inclusion criteria	Presence of descriptors in title, abstract and/or keywords.	

Source: Authors.

The search was performed on July 15, 2019 and returned 13 papers. Of these, according to the established criteria, 8 papers were pre-selected, and 6 were selected due to their proximity to the theme and the research objective. The documents were organized in chronological order, as shown in Chart 2.

Chart 2 - Theses and dissertations focusing on Knowledge Management in Academic Libraries

Title	**Author Year**	**Institution/Postgraduate Program**	**Type**
Knowledge management in academic libraries: experience analysis in Brazil and Portugal (1)	MARQUES JÚNIOR, 2010	Paulista State University Júlio de Mesquita Filho - UNESP / Postgraduate Program in Production Engineering	Dissertation (master's degree)
Proposal for an instrument for diagnosing information and knowledge management (GIC) in integrated manner for academic libraries (2)	DA SILVA, 2013	Federal University of Paraíba - UFPB/ Postgraduate Program in Information Science	Dissertation (master's degree)
Management communication devices in the social web: potentializing mediation activities of information and knowledge in the university libraries in brazil (3)	SANTOS, 2015	Federal University of Paraíba - UFPB/ Postgraduate Program in Information Science	Thesis (doctor degree)
Knowledge management framework for academic libraries (4)	DE BEM, 2015	Federal University of Santa Catarina - UFSC / Postgraduate Program in Engineering and Knowledge Management	Thesis (doctor degree)
Information and knowledge sharing among librarians of the integrated library system of the State University of Paraíba (SIB/UEPB) (5)	SOUZA, 2016	Federal University of Paraíba - UFPB/ Postgraduate Program in Information Science	Dissertation (master's degree)

Knowledge management in the information processing service: the case of SiBi/ UFSC (6)	DA SILVA, 2016	Federal University of Santa Catarina - UFSC / Postgraduate Program in University Administration	Dissertation (master's degree)

Source: Authors.

Originals in Portuguese language:
(1) Gestão do conhecimento em bibliotecas universitárias: análise de experiência no Brasil e em Portugal
(2) Proposta de um instrumento para diagnóstico da gestão da informação e do conhecimento (GIC) de forma integrada para bibliotecas universitárias
(3) Gestão dos dispositivos de comunicação da *WEB* social: potencializando as atividades de mediação da informação e do conhecimento em bibliotecas universitárias brasileiras
(4) *Framework* de gestão do conhecimento para bibliotecas universitárias
(5) Compartilhamento da informação e do conhecimento entre os bibliotecários do sistema integrado de bibliotecas da Universidade Estadual da Paraíba (SIB/UEPB)
(6) A gestão do conhecimento no serviço de tratamento da informação: o caso do SiBi/UFSC

In addition to theses and dissertations, the state of the art on KM in academic libraries was complemented by the search for national articles published on the CAPES Journal Portal, through the search strategies described in Chart 3.

Chart 3 - Articles on Knowledge Management in Academic Libraries

Title	**Authors Year**	**Journal**
Information and knowledge sharing: inserting practices of knowledge management in a system of federal universities (1)	ARAÚJO; PEREIRA; OLIVEIRA, 2010	Revista ACB: Biblioteconomia em Santa Catarina
Knowledge Management for Information Services: Analysis of Innovative Products and Services in Academic Libraries (2)	MARTINS, 2012	Biblos: Revista do Instituto de Ciências Humanas e da Informação
Knowledge management practices: the case of the university library UFSC (3)	DE BEM; AMBONI, 2013	Revista ACB: Biblioteconomia em Santa Catarina
Knowledge management applications in the field of library science and information science: a systematic review (4)	DE BEM; COELHO, 2013	Brazilian Journal of Information Science
Cooperation, sharing and collaboration: case of the network of libraries and art information centers in the state of Rio de Janeiro (REDARTE / RJ) (5)	OLIVEIRA; CIANCONI, 2013	Brazilian Journal of Information Science
Sharing and transfer of knowledge in the library management: a study of federal institutions of teaching in Santa Catarina State (6)	FAQUETI et al., 2015	Revista ACB: Biblioteconomia em Santa Catarina
Knowledge management in libraries: the librarian as a manager of information and informational resources and services (7)	SANTA ANNA, 2016	Biblos: Revista do Instituto de Ciências Humanas e da Informação
Interaction between the university library of agents UFSC: the Framework GC@BU application (8)	DE BEM; FELICIO; ROSSI, 2017	Brazilian Journal of Information Studies: Research Trends

Source: Authors.

Originals in Portuguese language:
(1) Compartilhamento de informação e conhecimento: inserindo práticas de gestão do conhecimento num sistema de bibliotecas universitárias federais.
(2) Gestão do conhecimento para serviços de informação: análise de produtos e serviços inovadores em Bibliotecas Universitárias.
(3) Práticas de gestão do conhecimento: o caso da biblioteca universitária da UFSC.
(4) Aplicações da gestão do conhecimento na área de biblioteconomia e ciência da informação: uma revisão sistemática.
(5) Cooperação, compartilhamento e colaboração: caso da rede de bibliotecas e centros de informação em arte no estado do Rio de Janeiro (REDARTE/RJ).
(6) Compartilhamento e transferência de conhecimento na gestão de bibliotecas: um estudo em instituições federais de ensino de Santa Catarina.
(7) Gestão do conhecimento em bibliotecas: o bibliotecário como gestor da informação e de recursos e serviços informacionais.
(8) Interação entre os agentes da biblioteca universitária da UFSC: aplicação do framework GC@BU.

4 RESULTS ANALYSIS AND DISCUSSION

In the analysis process, a synthesis of each dissertation and thesis was first performed, addressing the objectives, the methodology used and the main results achieved. Subsequently, from the full reading of the articles, we sought to identify the applications and practices of KM in academic libraries.

4.1 ANALYSIS OF DISSERTATIONS AND THESES

The dissertation by Marques Júnior (2010) aimed to identify and describe the KM practices most used by the main libraries in Brazil and Portugal. According to the author, the analysis presented showed similarity between the Brazilian and Portuguese libraries. It was also found that while some KM practices are widespread throughout the sample (as part of the unit's culture), most of the requirements necessary for the proper development of KM processes still need to be implemented. Among the KM practices that presented the lowest rates of dissemination and use within the researched libraries are: people management, knowledge identification, and maintenance of specific budget. Given the results of the research, the author concluded that the dissemination of practices related to KM in libraries in Brazil and Portugal can still be considered at an early stage.

Da Silva's masters study (2013), in turn, was intended to propose an instrument to diagnose information management and KM (GIC) in an integrated manner for academic libraries. The data were analyzed through content analysis, and the results indicated that there is a need to explore in

depth the specific themes of Information Management and KM (GIC), such as valuing the intellectual capital of servers. It was evidenced that the process of information and KM depends on well-planned actions, aligned with the users and organizational expectations, through the use of human, material and technological resources.

The research by Santos (2015) pointed out that KM enables better service to users, creates an enabling environment for participation and interaction, encourages and motivates debate; provides the sharing of knowledge and experience and allows the presentation of ideas and suggestions. KM can also provide a way for information workers to learn to share organizational knowledge.

De Bem's thesis (2015) aimed to develop a tool for working KM in academic libraries. The author developed a GC@BU Framework divided into three modules: a) Knowledge Management Coordination, b) Knowledge Resources and, c) Learning/Knowledge Spaces.

The study conducted by Souza (2016) analyzed the sharing of information and knowledge among librarians of a public educational institution. Their results showed that information sharing is mainly done through informal practices (email, telephone, social networks and conversations with colleagues). The author also observed that the interviewees considered the work environment favorable to the exchange of information and knowledge. However, the factors that make it difficult are related to geographical distance and lack of financial incentives.

Da Silva's dissertation (2016) investigated how KM occurs in the information processing service (cataloging) of libraries of a federal public university. Regarding the process of knowledge identification, the study found that there are no formal mechanisms for the identification of internal and external knowledge; it was also found that knowledge acquisition occurs informally. Regarding knowledge sharing, the results showed that the unit adequately performs the socialization of explicit knowledge registers. On the other hand, the use and retention of knowledge is incipient.

4.2 ANALYSIS OF THE SCIENTIFIC ARTICLES

The study by Araújo, Pereira and Oliveira (2010) aimed to present a proposal to promote an appropriate environment for sharing information and knowledge among the servers of the Library System (SiBi) of a federal public university. Their results showed that the sharing of information and

knowledge has as its central point people. Thus, it is important to create a favorable environment to later achieve acceptance by the entire team.

The study by Martins (2012) aimed to identify and know the innovations in products and services offered by academic libraries to attract their customers and meet their needs, from the perspective of KM. The results indicated that libraries are bothering to listen to their users' suggestions through the KM tools. Most of them are aware of changes and news in the market of innovations, be they technological or services. But there are still institutions that are not prepared to listen to their collaborators and their users.

The research by De Bem and Amboni (2013) reported on experiences with KM practices carried out at the library from a public university. According to the authors, the practices performed demonstrated the importance of knowledge sharing and reinforces the fact that knowledge grows and changes as it is shared.

The study by De Bem and Coelho (2013), in turn, aimed to identify applications and trends of KM in the areas of Information Science and/or Librarianship, from a systematic literature review. The results of this study showed that implementing KM in libraries leads to the best ability of these organizations to learn, identify and use internal and external knowledge in their processes and activities.

Oliveira and Ciaconi (2013) analyzed and identified the actions of the project called REDARTE/RJ to promote the generation of new knowledge and the implementation of new ideas. The identified strengths of the project were: trust environment, sharing initiative and free communication. In relation to the points to be improved, the following stand out: promotion of spaces for sharing faults, establishment of communication standards among member units and minimization of barriers regarding the use of ICTs.

The study by Faqueti et al. (2015), aimed to recognize which practices of knowledge sharing and transfer occur in Library Systems (SIBI) of Federal Public Education Institutions. Results indicated that, among the most recurring practices, are virtual collaborative spaces, wiki knowledge bases, other web 2.0 collaboration tools, and the Community of Practice. Still, it was found that many practices are not configured within a KM program, which decreases its effectiveness.

Santa Anna (2016) demonstrated in her study that information units, especially libraries, can not only provide access or possession of information, but must provide useful information capable of becoming knowledge in society. For this to happen, it is necessary the participation of all

professionals of the unit, so that the aspects related to the culture and the experience of each professional are shared.

Finally, De Bem, Felicio and Rossi (2017) analyzed the interaction between the academic library agents of a public university through the identification, evaluation and registration of the interaction elements. The authors found that the analyzed academic library did not formally map the interactions between its agents (user, collaborator, supplier, librarian, teacher, among others).From the research was created a mind map that allowed to visualize actions and propose improvements. A summary of key information about each survey (including objective and conclusions) can be viewed in Appendix A.

5 FINAL CONSIDERATIONS

This article aimed to identify and analyze how the theme Knowledge Management, related to the context of academic libraries, has been approached in empirical studies in the last decade, and its possible contributions. For this, a state of the art was made, based on documents contained in the database "Brazilian Digital Library of Theses and Dissertations - BDTD", as well as in the Portal of Journals, at the level of Brazil.

From the bibliographic production that was searched, it was found that this theme is discussed under different approaches, such as: (1) comparative study on practices related to KM in Brazilian libraries and Portuguese libraries, (2) proposition of instruments for diagnose or manage information and knowledge in an integrated manner, (3) experience reports with the application of KM, (4) identification of implemented KM practices, among others.It was also evidenced that KM provides the capacity of these organizations to identify, share and use knowledge, helping to reduce costs and improving the quality of services offered.

On the other hand, it was possible to notice that, although most of the researched institutions use KM practices, it is carried out informally and not systematically, which reduces the effectiveness of these practices. Furthermore, it was evidenced that the implementation of KM in information units will depend greatly on the initiatives and attitude of the professional responsible for the unit, as well as on the organizational culture. These results corroborate Angeloni's (2008) theory that, in order to manage knowledge, it is necessary to take into account three dimensions that are interacting and interdependent: organizational infrastructure, technology and people.

As a contribution to the information units, the study found that the traditional way of administering academic libraries is inadequate in the face of new demands, and it is necessary to rethink the management of these units, including the way knowledge is being managed. As a suggestion for future research, it is suggested to expand studies to other databases, with different library typologies, as well as involving the international literature.

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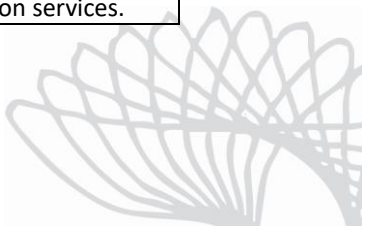
Appendix A - Key Findings from Brazilian Studies on Knowledge Management in Academic Libraries

Author	Objective(s)	Method	Target audience	Key findings
MARQUES JÚNIOR (2010)	- Identify and describe the practices related to knowledge management used by most major libraries in Brazil and Portugal	Quantitative, descriptive-analytical character	44 organizations from Brazil and 25 from Portugal (university library directors)	- The dissemination of knowledge management practices in libraries in Brazil and Portugal is still incipient.
DA SILVA (2013)	- Proposition of an instrument to diagnose information and knowledge management (GIC) in an integrated manner for academic libraries	Qualitative - exploratory-descriptive character	Libraries of the Federal University of Ceará (UFC) and the University of Fortaleza (UNIFOR)	- The process of information and knowledge management depends on well-planned actions, aligned with organizational and user expectations, through the use of human, material and technological resources.
SANTOS (2015)	- Analyze how information and knowledge management actions can contribute to improving information mediation activities in communication devices of the social web of academic libraries	Descriptive Search - Deductive Method with Content Analysis	Central libraries or library systems (federal public universities and state public universities)	- Knowledge management enables (1) better customer service, (2) creating an enabling environment for participation and interaction, (3) encouraging and motivating debate, (4) sharing knowledge and experience, and (5) presenting ideas and suggestions.
DE BEM (2015)	- Develop a tool for working knowledge management in academic libraries	Qualitative - bibliographic research and focus group interview	80 managers of Brazilian academic libraries	- Creation of GC @ BU Framework, divided into three modules: a) Knowledge Management Coordination; b) Knowledge Resources and; c) Learning/Knowledge Spaces.
SOUZA (2016)	- Analyze the sharing of information and knowledge among librarians of the Integrated Library System of Paraíba State University (SIB /UEPB)	Methodological triangulation - online questionnaire, online focus group and interview	Librarians of the Integrated Library System of Paraíba State University	- Noted the existence of a professional profile updated, dynamic, flexible and interested in learning actions.
DA SILVA (2016)	- To investigate how knowledge management occurs in the information	Qualitative, case study	Libraries of the Federal University of Santa Catarina (SIB/ UFSC)	- Verification that there are no formal mechanisms for

	processing (cataloging) service of the Federal University of Santa Catarina Library System (SIB/UFSC)			identifying internal and external knowledge; - Finding the absence of mechanisms for the acquisition of knowledge, since the acquisition occurs informally - There is no effective knowledge management in the SiBi/ UFSC Information Handling Service.
ARAÚJO; PEREIRA; OLIVEIRA (2010)	- Present a proposal to promote an environment conducive to the sharing of information and knowledge among library system (SiBi) servers at the Federal University of Paraná (UFPR)	Qualitative - exploratory-descriptive character	Federal University of Paraná Library System, comprising 15 academic libraries	- The sharing of information and knowledge is centered on people. - To be successful in creating an enabling environment for sharing information and knowledge, it is necessary to clarify some concepts such as: knowledge management and organizational culture for all SiBi employees. - The proposal presented included some actions such as short course, motivating activity, identification of SiBi employees' intellectual capital, creation of the knowledge map, collaborative tools, among others.
MARTINS (2012)	- Identify and know the innovations in products and services offered by academic libraries to attract their customers and meet their needs, from the perspective of Knowledge Management.	Qualitative, exploratory-descriptive character	Randomly selected academic libraries (six libraries)	- The researched libraries are concerned with listening to their users' suggestions through Knowledge Management tools (such as virtual social networks) and also listening to their collaborators. - The results showed that there are still institutions that are not prepared to listen to employees and users, and do not bet on the creation of innovation services.



DE BEM; AMBONI (2013)	- Report on experiences with knowledge management practices conducted at the Academic Library of the Federal University of Santa Catarina	Descriptive study with qualitative approach	Academic Library of the Federal University of Santa Catarina	- The practices demonstrated the importance of knowledge sharing and reinforces the fact that knowledge grows and changes as it is shared.
DE BEM; COELHO (2013)	- Identify applications and trends of knowledge management in the areas of Information Science and/or Librarianship, from a systematic literature review.	Bibliographic study (Systematic Literature Review)	Articles retrieved based on the protocol defined for the Systematic Literature Review.	- Implementing Knowledge Management in libraries leads to the better ability of these organizations to learn, identify and use internal and external knowledge in their processes and activities.
OLIVEIRA; CIACONI (2013)	- Identify and analyze REDARTE/RJ actions to promote the generation of new knowledge and the implementation of new ideas.	Qualitative (case study). Use of methodological triangulation (interview, questionnaire and document analysis).	Project creators, presidents, representatives of the member units and collaborating partners of the "REDARTE/ RJ" project	- There is an environment of trust; Professionals seek to assist in resolving work-related issues and there is no resistance to new ideas and projects. - There are aspects related to the informational and organizational culture that need to be improved, especially the sharing of information and experiences remotely.
FAQUETI et al. (2015)	- Recognize which sharing practices and Knowledge transfer occurs in the Library Systems (SIBI) of Federal Public Education Institutions.	Qualitative (exploratory in nature), by interview	Managers of two Library Systems (SIBI) of Federal Public Education Institutions	- Among the most recurring sharing practices and knowledge transfer are virtual collaborative spaces, wiki knowledge bases, other web 2.0 collaboration tools, and the Community of Practice.
SANTA ANNA (2016)	- Present the Knowledge Management developed in information units and the role that the librarian plays in this context.	Bibliographic study	Management and Library Literature about Knowledge Management in information units	- Information units, especially libraries, cannot only provide access or possession of information; It is necessary to provide useful information capable of becoming knowledge in society.

				- In information units, Knowledge Management will only materialize when the responsible professional takes the managerial position, not only using simplistic and traditional management techniques, but expanding methodologies and building a systemic management.
DE BEM; FELICIO; ROSSI (2017)	- To analyze the interaction between the agents of the academic library of the Federal University of Santa Catarina, through the identification, evaluation and registration of the interaction elements.	Qualitative (descriptive in nature)	Academic Library of the Federal University of Santa Catarina (UFSC)	- The UFSC Academic Library did not formally map interactions among its agents (users, contributor, vendor, librarian, etc.) - Creation of a mind map that made it possible to visualize actions and propose improvements, such as: information flow, standardization of procedures, knowledge sharing, structural changes and reuse of resources.