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EPISTEMOLOGICAL ELEMENTS IN THE CONSTRUCTION OF THE CURRICULAR STRUCTURE OF THE GENERAL EDUCATION SYLLABUS OF THE INFORMATION SCIENCE COURSES OF UFSC

ELEMENTOS EPISTEMOLÓGICOS NA CONSTRUÇÃO DA ESTRUTURA CURRICULAR DO NÚCLEO DE FORMAÇÃO GERAL DOS CURSOS DE CIÊNCIA DA INFORMAÇÃO DA UFSC

[1] William Barbosa Vianna
Universidade Federal de Santa Catarina
Florianópolis, Santa Catarina – Brazil

[2] Sonali Paula Molin Bedin Brasil
Universidade Federal de Santa Catarina
Florianópolis, Santa Catarina – Brazil

Correspondence
[1] E-mail: william.vianna@ufsc.br

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ABSTRACT
The relationship between epistemology and curricular structure is established from studies in which the attainment of knowledge is preserved. In Information Science, some elements are widely discussed, such as: interdisciplinarity, the relation with the information technology and the social insertion. The present study intends to analyze the curricular structure of the General Training Syllabus, common to the courses of Archival Studies, Librarianship and Information Science that are offered by the Department of Information Science of UFSC, from the perspective of information technology. It uses qualitative research as a way of approaching the problem, once the data were collected directly from the existing documents and classified for an interpretative analysis by the researcher; concerning technical procedures, this study is supported by a bibliographical research in order to gather theoretical references, which were chosen intentionally for their already renowned relevance to the field of study; concerning the objectives, it is characterized as an exploratory and descriptive research. As a result, it was possible to identify that the epistemological relationship of these areas remains preserved.

KEYWORDS
Academic curriculum. Epistemology. Information technology.

RESUMO
A relação entre epistemologia e estrutura curricular se estabelece a partir dos estudos nos quais a obtenção do conhecimento é preservada. Na Ciência da Informação alguns elementos são amplamente discutidos, tais como: a interdisciplinaridade, a relação com a tecnologia da informação e a inserção social. O presente estudo se propõe a analisar a estrutura curricular do Núcleo de Formação Geral, comum aos cursos de Arquivologia, Biblioteconomia e Ciência da Informação que são ofertados pelo Departamento de Ciência da Informação da UFSC, sob a perspectiva da tecnologia da informação. Utiliza a pesquisa qualitativa como forma de abordagem do problema, uma vez que os dados foram coletados diretamente dos documentos existentes e classificados para uma análise interpretativa do pesquisador, do ponto de vista dos procedimentos técnicos se apoia na pesquisa bibliográfica para levantamento dos referenciais teóricos que foram escolhidos de forma intencional pela relevância já consagrada na área e, do ponto de vista dos objetivos, se caracteriza como uma pesquisa exploratória e descritiva. Como resultado foi possível identificar que a relação epistemológica dessas áreas se mantém preservada.

PALAVRAS-CHAVE
Currículo acadêmico. Epistemologia. Tecnologia da informação.

Introduction

Formal education fulfills a fundamental role in society since the units of education need not only to train citizens critical to interact with society and the issues that involve it, to meet the expectations and needs of the market in which they are inserted and with whom they interact directly.

The great challenge is to bring this training closer to the ideal expected to guarantee adaptation to the job market with social awareness, technical competence and competitive conditions, being the professionals able to understand and collaborate in the strategic paths traced. From the academic point of view, according to the World Declaration on Higher Education in the 21st Century, training must approach society and recognize its demands. In its Art.7, the UNESCO document proposes: "Strengthening cooperation with the world of work, analyzing and preventing the needs of society". (UNESCO, 1998).

Brazilian universities do not have a long tradition, considering that the records show that the first institutions of higher education were installed with the arrival of the Royal Family in 1808. In this trajectory, several interferences made these institutions oscillate in their purposes, with the conduction of their management processes and very specific training objectives that sought to align with the treaty in Portuguese institutions. However, these models did not fully meet the needs of Brazilian society (BRASIL, 1999).

Cultural plurality and economic diversity, supported by the appropriation of increasingly explicit knowledge, have changed the backgrounds of professional training and performance. According to Silva and Cunha (2002), the changes require professionals in line with market expectations, but with a critical condition sufficient to understand reality, act on it and adapt to it. According to Queiroz (2016), the university has the social responsibility to continuously feed with new knowledge the process of economic and social development of a country.

The undergraduate curricula are studied and elaborated in the universities with the aim of providing the student with a list of disciplines that involve all the aspects that the pedagogical body composed of teaching researchers, in line with the university strategies, considers to be important for training. These curricular matrices are traditionally discussed to exhaustion where all biases are placed and the final option falls under the category of disciplines that guarantee the basic contents or fundamental for the formation of the professional. These discussions discuss the epistemological relationship between the disciplines, in which the contents and methodologies are linked and interconnected and what they represent in the context of the proposed curricular development (BRASIL, 1999).

For Lourenço (2016),

> The task of the curriculum is to empower the desire to learn, offering new possibilities and opportunities to expand knowledge and empowering each to apply it in multiple and diverse contexts of life. (LOURENÇO, 2016, p. 32).

Based on the understanding of Saracevic (1996) that Information Science is interdisciplinary, the objective of this article is to present an analysis of the General Training curriculum of the courses that integrate the Information Science Department of the Federal University of Santa Catarina (UFSC) being the main object the epistemological connection. To understand the epistemological relationship between the disciplines, the study of some aspects of Information Science will take place from authors such as Saracevic, Borko, Shera and LeCoadic. Specifically, the study intends to present the concepts and characteristics of the IC and to identify the main element of connection, in addition to demonstrating this connection in the contents proposed in the menus.

According to the characteristics presented by Creswell (2010), the research is characterized as qualitative, since the data were collected directly from the existing documents and classified for an interpretative analysis of the researcher. It also relies on bibliographical research to survey the theoretical references that were chosen in an intentional way because of the relevance already established in the area.

1 Information Science and Some Epistemological Bases

We start from the understanding that there is no single science in which all knowledge in it fits perfectly or even if it differs from science it will not be science. Also, it would not be possible to adopt or prescribe a generalist characterization for science in the same way that it is imprecise the condition of recognition of sufficient criteria or requirements to define what is or is not acceptable as science. If this is so, then each area needs to be analyzed for its representation and development, its objectives and its methodologies (CHALMERS, 1993).

Information Science (CI) seeks to develop within these elements, but it is still seen as a science that has been consolidating, that still does not find unicity in its definition and in the concept of its field of study that is information. The importance of information in the contemporary world is undeniable, and Information Science has put its expertise in the service of social and economic development. The knowledge developed in the area has contributed to questions related to the search, retrieval and treatment of information (SANTA ANNA, 2018).

In an attempt to construct an understanding of the epistemological bases of CI, we begin with the concept of epistemology presented by Japiassu (1977, p.16) which considers, in the broad sense of the term, "the methodical and reflexive study of knowledge, of its organization,

of its formation, of its development, of its functioning and of its intellectual products. " Also, as suggested by Ziles (2005: 34), when he mentions that epistemology "studies not content but the form of science," bringing Galileo and his understanding that "science is restricted to the field of phenomena, seeking their laws. "

Historically the Information Science was built from discussions that dealt with interdisciplinarity, information as its object of study and social importance as a field of study.

For Borko (1968) it is a discipline focused on the investigation of information, its characteristics, behavior, flows and means of treatment and access. On the other hand, Shera (1973) defends to be a social science by the characteristics and search of the human representations and the interdisciplinarity that these representations demand.

Le Coadic's discussion (2004) addresses the aspects that involve information, its records and communication,

> [...] the information science identified and delimited its object of study and fundamental research problems: study of the general properties [...] of the processes and systems of construction, communication and use of information. (LE COADIC, 2004, p.55).

The author shows that it is a science that will also deal with the interaction with the technological resources and the intervention of the experts in the processes when it reports that the information science had great contribution and was developed from the technologies and techniques that allowed the systematization, the transmission , processing, storage and access to information (LE COADIC, 2004).

Prior to Le Coadic's contribution, Saracevic (1996) had already redefined the concept of Information Science, elucidating that:

> [...] is a field dedicated to scientific questions and professional practice focused on the problems of the effective communication of knowledge and its records among human beings in the social, institutional or individual context of the use and information needs. In dealing with these issues, the advantages of modern information technology are considered to be of particular interest. (SARACEVIC, 1996, p.47).

The same author asserts that Information Science relies on three characteristics: its interdisciplinary nature, its close connection with information technology and its contribution to the information society. These characteristics would determine the understanding of IC (SARACEVIC, 1996).

The proposed interdisciplinary nature is due to the mutual contribution of experiences of areas that seek the solution of problems from the information. Thus, Saracevic (1996) focuses on the fields of librarianship, computer science, cognitive science and communication, indicating that they are the most significant for representing interdisciplinarity. The author understands that it is necessary to share experiences, regarding the understanding of information and the best forms of use and sharing. It also indicates that it is necessary to develop compatible technological solutions for solving these issues and, thus, draws the connection between Information Science and information technology.

When Saracevic (1996) addresses information technology, it refers to the social needs for solving problems arising from the information production explosion that society has been experiencing. The author discusses the importance of information retrieval and how these studies were decisive. This interrelationship shows that CI participates actively in the information society by contributing to the construction and employment of these necessary technologies.

For the purpose of this research, the option of analysis was by the epistemological element of Saracevic (1996) that deals with information technology, as specified above. The interdisciplinary character guides the discussion, approaching the areas of Archivology, Librarianship and Information Science. As interdisciplinarity, we adopt the understanding of Pombo (1993), which indicates the cooperation and integration of disciplines that seek a common object.

2 The Courses of Information Science and the Curricular Construction

The Department of Information Science of UFSC hosts the baccalaureate courses in Archivology, Librarianship and Information Science. These integrate the epistemological base of Information Science, in what concerns the interdisciplinarity.

This interdisciplinarity is concretized in the "theoretical-epistemological premises" presented by Silva (2013, p.76) which indicates, "a) as processes of internal integration between disciplines; b) as modifications of disciplinary structures, contemplating the particularities and generalities of the disciplines ".

The implementation of the courses followed objectives aimed at the specific professional formation in the area based on the guidelines of their fields of knowledge and research, according to the Course Plans (2016).

Table 1. Pedagogical Construction of the Courses of Archivology, Librarianship and Information Science of UFSC

Guiding Principles	
Course: Archivology	
General objective	Provide the professional training of the Archivist enabling him to act in a critical and reflexive manner on the dimensions of social reality.
Specific objectives	a) offer conditions that allow the student to develop a critical view of society; b) to qualify for the future exercise of the managerial and technical functions proper to the professional field of Archives; (d) to enable the student to study in a judicious and effective manner, and (c) to stimulate in the students the values and capacity to assume, in the future, the professional challenges, knowing how to choose the best theoretical and practical alternatives for the fulfillment of the social demands; investigation of its context, in view of the future generation of professional and scientific knowledge; e) instrumentalize the student to act critically, creatively and efficiently in the professional organization and management of archival information, proposing solutions that lead to the awareness of the value of professionals, information and recognition by society; f) teach the student to manage the information in different media, applying archival principles supported in information and communication technologies; g) prepare the student to promote theoretical-practical knowledge directed to the activities of production, analysis, classification, evaluation, description, preservation, recovery, mediation, dissemination and use of archival information.
Egresso's profile	Ability to assume the burdens that the Brazilian legislation of their profession provides and that, in addition, they are prepared to expand the knowledge of its field; contents of the Archivology, corresponding to this academic level, and prepared to face, with proficiency and creativity, the opportunities and challenges of their professional practice, especially those that require interventions in archives, documentation or information centers, cultural centers, services or information networks, cultural heritage management bodies.
Skills	- identify the boundaries that demarcate their field of knowledge; - generate services based on the knowledge acquired and disseminate them; - formulate and implement institutional policies; - design, coordinate, execute and evaluate plans, programs and projects; - develop and use new technologies; - translate the needs of individuals, groups and communities in their respective areas of activity; - develop autonomous professional activities, in order to guide, direct, advise, advise, perform expertise and issue technical reports and opinions; - respond to the demands of information produced by the transformations that characterize the contemporary world.
Course: Librarianship	
General objective	To train librarians with a critical vision of society capable of acting as information professionals imbued with the commitment to information management and its dissemination and with awareness of their social role in the elimination of barriers to access information that is political, technological, economic, educational, social, cultural and recreational.
Specific objectives: Train for:	a) process the information registered in different types of support, b) apply theoretical and practical management knowledge in the planning and operation of information units; c) manage activities of selection, analysis, storage and dissemination of information; d) conduct research on products and services, processing, transfer and use of information; e) master information technologies for use in information services; f) to manage the implementation of computerization programs in information units;

	g) act as a stimulator and guide in the use of information resources through actions and programs of education of users.
Egresso's profile	a) information unit manager; b) technician in the treatment of information; c) educator in the use of informational resources.
Skills	In Communication and Expression; Technical-Scientific; Management; Social and Political.
Course: Information Science	
General objective	Train entrepreneurs capable of identifying, developing and deploying innovative, integrated and collaborative solutions, both human and non-human, in various technical formats to solve real information problems.
Specific objectives:	- Develop a teaching-learning process integrated in scientific initiation and professional action; - Flexibilize the continuous updating of contents and a dynamic, constant and frequent curricular revision; - To reconcile the contents of the Bachelor of Science in Information with the research lines of the Graduate Program in Information Science (PGCIN); - Promote entrepreneurship and innovation as a cross-cutting theme;
Egresso's profile	Entrepreneurial profile and ability to lead and manage multidisciplinary teams in the identification, development and implementation of innovative, integrated and collaborative solutions, human and nonhuman, in various technical formats to solve real information problems; Have a systemic vision and ability to integrate the solid knowledge of the common core of General Information Science Education with the Specific Knowledge of the Bachelor and apply them initially in the professional practice of the stages associated with scientific initiation; Be able to follow the evolution of information and communication technologies and identify, propose and implement possible and feasible solutions to emerging challenges.
Skills	- Analyze, evaluate and organize public and private databases; - Designing, developing and deploying information services and systems (processing, generation, processing, transmission, reception, presentation, storage and information security); - Subsidize decision making through data filtering; environmental scans; analysis of patent literature, metric studies of information, tracking and analysis of information policies; technology for benchmarking and data availability for transparency, accountability, technical reports, executives and others. - To subsidize programs and projects of innovation with knowledge of information science; - Analyze and compare information and communication technologies regarding usability, considering technical, economic and social aspects; - Leading and participating in multidisciplinary teams in information management projects; - Manage and participate in information technology projects; - Evaluate performance, size and optimize information processing systems; - Enable interoperability of wastewater treatment systems information; - Monitor, evaluate, issue opinions and technical reports on projects and information and communication systems;

Source: Federal University of Santa Catarina (2015, 2015a, 2015b).

The Bachelor's Degree in Information Science was implemented in 2016 and was part of the process of curricular changes of the other courses and attended a construction around the need for professional training to meet the specifics of the innovative and entrepreneurial universe with strong technological vocation of the state of Santa Catarina, more specifically of the city of Florianópolis and region.

The curricular formation of the courses counts in its pedagogical construction with a Core of Common General Formation that intends to sediment the knowledge bases of the area with respect to the fundamental knowledge of Information Science: information identification, capture, treatment, representation and recovery, culminating with specialized use. These bases consolidate what is expected for the training of archivists, librarians and bachelors in information processing.

Table 2. Disciplines of the General Formation Nucleus distributed by phase

1st. PHASE	
subject	**Menu**
Introduction to Information Science	It seeks to identify the historical / social perspective of Information Science in the world and in Brazil. Understand the theoretical contributions and their pioneers. Insertion of Information Science in Applied Social Sciences according to its object of study, its theories and its interdisciplinarity.
Evolution of Philosophical and Scientific Thought	It deals with the main historical forms of philosophical and scientific discourse, from the first Greek manifestations to the present day.
Bibliographic research	It deals with the scientific communication, the methods and techniques of bibliographic research, the history of general normalization and the normalization of documentation and knowledge and assimilation of documentary standardization procedures created in Brazil by ABNT.
Introduction to Information and Communication Technologies	Introduction to information systems. Fundamentals of information and communication technologies. Hardware (components, storage technology, input and output technology), software (types, generations) and computer networks. Text editors. Spreadsheets. Installation and configuration of programs.
Instrumental Logic I	Introduction to Logical-Mathematical Reasoning. Set Theory. Propositional Logic. Calculation of Predicates. Analysis and Validation of Arguments. Introduction to Deductive Thinking.
Entrepreneurship I	Fundamentals of entrepreneurship. Concepts, origins and evolution of entrepreneurship. Success factors and entrepreneurial culture. Characteristics and entrepreneurial profile.
Reading and Writing Text	Theoretical approaches to reading and related reading concepts. Levels, strategies and reading practices. Texturization / textuality factors, rules of coherence and referencing. Conditions of textual production and particularities of discourse genres.
2nd. PHASE	
Sources of Information I	It deals with universal and national bibliographic control. It presents the typology and purpose of the sources of information. Analyzes and evaluates general information sources.
Knowledge Organization Systems	It covers the introductory aspects about theories and methodologies of the Knowledge Organization Systems (SOC), used for the organization and retrieval of information: classifications, thesauri, taxonomies and ontologies.

Information society	Information society and knowledge economy. Cyberculture. Digital convergence. Electronic government and electronic governance. Networking organizations. Social networks.
Information Retrieval	Information retrieval systems, generations, logics, resources and search strategies in databases. Information retrieval on the Web, search engines, directories and meta search engines.
Professional ethics	Professional ethics. Rights and duties. Behavior and professional posture. Professional secrecy.
Introduction to Administration	The organization as object of management. The pioneers of Administration as science. The administrative functions: Planning, organization, coordination, command and control.
3rd. PHASE	
History of Contemporary Brazil	The formation of Contemporary Brazil. History and culture Afro-Brazilian and indigenous. From the 1st Republic to the military dictatorship. Redemocratization and Brazil: current issues and contemporary issues.
Introduction to Thematic Representation	Introduction to Information Analysis. Indexing - typology, tools and methodologies. Covers introductory aspects of Information Retrieval.
Introduction to Descriptive Representation	Theoretical, methodological and guiding principles of descriptive representation. Elements, levels and research instruments of the descriptive representation. Norms and standards of descriptive representation and its applications in informational resources.
Informational Competence	Conceptual, historical and methodological aspects of Informational Competence. Dimensions of Informational Competence. Development programs and models of Informational Competence.
Organization, Systems and Methods	Theoretical basis for OSM. Instruments, professional performance and structural aspects involved. Behaviors, characteristics and (re) organizational designs. Management of processes, administrative analysis and organizational knowledge. Implementation of administrative processes and project development.
Quality management	Concept of quality management in organizations. Quality management systems and approaches to support tools applied to the information unit. Routine management and information unit processes. Efficient resource management. Study and representation of processes.
Research methodology	It addresses the socio-historical concepts of science, knowledge, research and scientific communication. It deals with the methods and techniques of social research and the preparation of the project and execution of the research until its final stage of preparation of the final report.
Introduction to Databases	Database. Database Management Systems. Databases and Databases. Database Design.
4th. PHASE	
Metrics Studies of Information	Theory and practice of metric studies since its origin and its main representatives in the world, national and academic scope in Information Science. Understanding statistical phenomena in scientific and technological information, providing basic support for students to understand the context of metric studies. To present consolidated systems of measurement of Science and Technology, as well as the quantification of bibliographical / documentary information.
Scientific Publishing	It deals with the history and organization of publishers, the national and international book market. It addresses the traditional and electronic publishing processes.
Accessibility and Digital Inclusion	Study of social inclusion / exclusion processes through the digital interface. Inclusive potential of Information and Communication Technologies (ICTs) in contemporary society. International standards and standards on accessibility;

	study of assistive technology and other technological innovations aimed at the social inclusion of people with disabilities.
Strategic planning	It aims to provide the student with an understanding of the concepts of strategic management in service organizations in a systemic way, in particular information units. Special focus on planning supported by performance measures and aiming to increase value-added is essential. The management of personnel and resources (physical and material) is necessary for the success of strategic management. Such an understanding is important in the management of information units in particular in relation to the user and the surrounding environment.
Computerization Project	It addresses the information unit as a system, its nuclei of activities, its functions and tasks, and the motivations for its computerization. It plans the computerization of an information unit, from the choice of solutions and the acquisition of programs or the development of its own systems.
Information Marketing	It addresses the types and characteristics of the users of information unit services, their impact on the decision making regarding the implementation of these units and on the transformations of these services according to the existing demand profiles in various social environments. It deals with the procedures used for the knowledge of communities of interest in information, aiming at the preparation of study project.
Applied Statistics I	Descriptive statistics. Development of research tools. Notions of Probability. Use of the main probability distributions. Topics of statistical inference.
Digital Preservation	It deals with digital formats, digitalization of documents, national digital and international digital preservation policies and projects. Techniques and instruments for the treatment of the data of maps, photographs, cartographies and other documents of images, sounds and texts. Copyright, intellectual property and software licensing.

Source: Federal University of Santa Catarina (2015, 2015a, 2015b).

The joint development of these disciplines follows guiding principles proposed for curricular articulation of the three courses, being a "methodological perspective capable of sustaining the formation of personnel focused on the development and material growth of society", as established in its PPCs: flexibility and transversality, organicity, balance between theory and practice, student interaction with community, globality in specificity, actuality, criticality, authority and adaptability.

3 Methodological Procedures

The study started with the bibliographical construction of references for understanding the epistemological bases of Information Science, from intentionally selected authors. The adoption of techniques pertinent to the qualitative research, allowed the data collection, through the documents included in the PPCs of the courses. Qualitative research, according to Merriam (1998), by its instruments, can facilitate the understanding and meaning of social phenomena. For Creswell (2010), it is a possibility of understanding the meaning of the content.

The sample was selected intentionally, being constituted in the 29 (twenty-nine) disciplines that compose the Core of General Formation common to all the courses. Saracevic

(1996) proposed a series of papers that looked at the interconnection between them, identifying in their contents aspects that approach or reflect the epistemological elements proposed by Saracevic (1996). The content, interfaces between the curricular construction and the objectives and competences intended at the end of the training were considered in the analysis. Also, the points listed as components of the egress profile were considered in an attempt to show if the formation mirrors the expectations of the curricular construction in force.

In fact, the curricular structure is made up of 33 (thirty-three) disciplines; however, four of them, due to their specificities, were disregarded for this study, namely the Tutorship I and Tutorship II disciplines, which are designed to establish reception and (these actions are coordinated with the proposals and programs of student politics of the UFSC) and the subjects of Community Interaction I and Community Interaction II, which are intended to establish actions that correspond to one of the three dimensions that involve the higher education institutions and their function, which is "[...] to integrate their activities to the social dynamics regarding access to systematized knowledge and the service they generate." (BRASIL, 1999, p.1).

4 The Relationship Between the Disciplines: Analysis of Results

For purposes of analysis, in this study the object will be the epistemological link, from the concept of Saracevic (1993, 1996), regarding the technological perspective.

When the author talks about CI's connection with information technology, he believes that the strength of technological tools and solutions determines several fields of knowledge by how they integrate and transform society in terms of the relationship they establish with information. It describes the informational explosion as an issue to be solved or also mediated by CI. Proving the importance of solving the information problem, Saracevic (1999) indicates that this search involves several areas, where it is necessary to congregate related areas for the sharing of research and scientific knowledge.

In spite of the certainty that information has always been fundamental for society at any time, in contemporary times it has become the driving force for development, the central point that determines innovation and which impacts and transforms all spheres of society. The close relationship between the need for and the production of information and the technologies that guarantee its entire treatment until recovery, place CI as the area of fundamental and effective importance since it has the resources to direct the best practices.

The disciplines that compose the curricular structure of the General Training Center are not limited only to the contents of the area of Information Science, but also cover other fields of knowledge seeking to allow the discussion of other references that are also necessary,

according to the expected profile of course egress. These contents are considered complementary to the specific training and are classified as indispensable training, in the case here, in Archivology. (FEDERAL UNIVERSITY OF SANTA CATARINA, 2015, 2015a, 2015b).

Another characteristic of these subjects of general formation is that, because of their general nature, they contribute with foundations for the specific contents and present themselves in both theoretical and practical activities.

This general condition concretizes the interdisciplinarity proposed by Saracevic (1996), who discusses the relation of Information Science with other disciplines in its field of formation. The interdisciplinary character is consolidated in the insertion and combination of different fields with disciplines coming from the field of Administration, History, Law and Letters and with the pretension to provide to the student the conditions to develop skills that involve abstraction, interpretation, analysis, creation. The curricular articulation turns to the construction of a broad and solid cultural base.

4.1 Classification of Subjects: Information Science and Information Technology

Divided into four phases, the curricular structure of the General Training Center proposes an introduction to the basic concepts of the area, considering the importance of information as a central focus and technologies as a foundation for new developments. Capurro and Hjorland (2007) bring that information is all that responds to a need, individual or group. For Le Coadic (2004), information is all that is registered of some was and makes some sense.

According to Saracevic (1974), information problems are linked to two antagonistic points: if on the one hand it is clear that there is an informational explosion, on the other, there is still a shortage of relevant information to the user. In this sense, the author puts the technologies, the specific systems, as a search for solution of these questions. It also stresses that development must meet the needs of use in each context.

In this condition, the disciplines need to seek to develop acting and interaction skills in solving these problems. In the curricular structure studied, we find the disciplines described in Figure 1.

Figure 1. Disciplines related to Information

Source: Research data (2018).

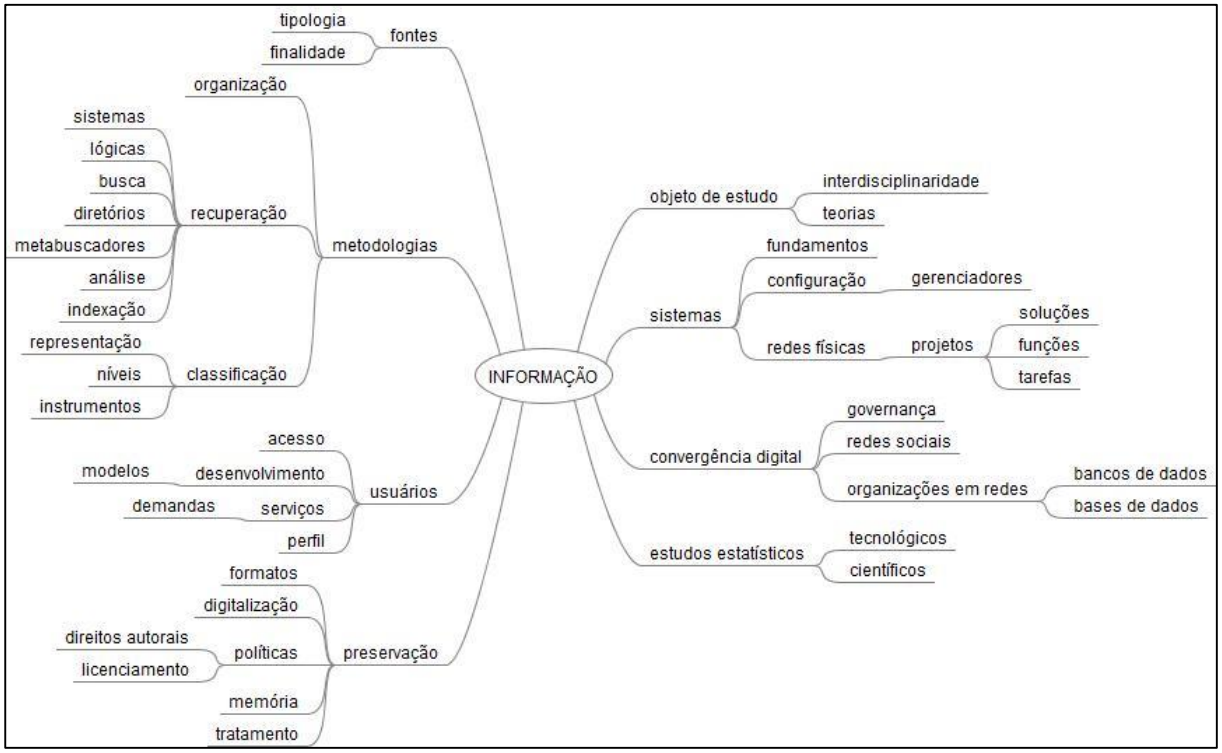
It is possible to verify that the disciplines follow a logical direction in what concerns the requirements that involve the understanding of the fundamentals of CI and the instruments that lead to the most appropriate treatment of information in all its implications. This treatment involves all steps, from identification of needs, search, recovery, treatment and subsequent recovery, culminating with storage and preservation.

In these steps it is clear that technological solutions are essential for optimizing activities that require the intellectual participation of the agent that is interacting and mediating these steps in their context. As with Saracevic (1996), who discusses the stages involving technological inputs, Capurro and Hjorland (2007) also reinforce the importance of computational aspects, explaining that they are related first to Computer Science, but both, CI and Computer Science overlap.

Man-machine interaction has been studied in conjunction with the development of robust information and information retrieval systems. The studies and development of resources that allow the connection between the users and the systems have been object of interdisciplinary researches, that involve Information Science and Computer Science. The information would then be this link. (BEDIN, 2007).

Analyzing and categorizing the individual contents of each subject, we identify some characteristics that indicate this interconnection of its contents, as shown in Figure 2.

Figure 2. Interconnection of disciplines



Source: Research data (2018).

In this categorization it is possible to identify the interfaces that happen between the disciplines in all the phases. In Information Science and historically in Librarianship, concern has always involved the categorization of information, treatment and retrieval. McGarry (1999, p.11) states that "information must be ordered, structured or contained in some way, otherwise it will remain amorphous and unusable." By empowering these perspectives, the skills and competencies sought now involve the knowledge of other mechanisms that are being added to the primordial actions of the area.

Figure 2 shows the relationships of the categories, which involve all steps from the potential user. In disciplines such as Information Competence or Information Marketing, the proposal contemplates information from the perspective of the user. In the same line, although the term "user" is not explicitly stated in the menus, in the disciplines of Descriptive Representation, Thematic Representation and Knowledge Organization Systems, the objective is to categorize, classify and organize information favoring resources that allow the retrieval of information, always focused on the user. In this way, the interface of these disciplines is established with the discipline of Information Retrieval.

Other interfaces are also visible: the disciplines of Digital Preservation, Computerization Project, Introduction to Databases also intertwine when their contents are concerned with the

formal aspects that involve networks, data records, policies, new requirements and formats. Without departing from the disciplines that involve treatment, these mentioned ones also interrelate when the objective is the recovery of the information.

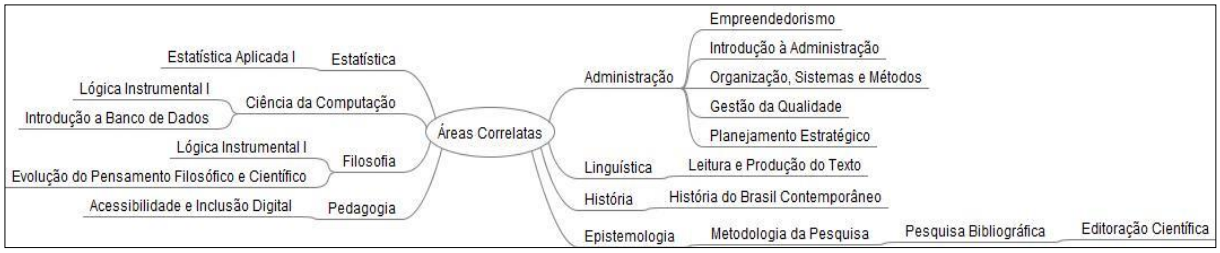
The categorized analysis of the menus makes clear the general intention of the curricular structure, which seeks to reinforce the main and basic concepts of the field of Information Science. Likewise, allied with this generalist identification, the contents also show a strong insertion of the contents of the technological field that can no longer be dissociated from the practices of CI, as Saracevic (1974) asserts.

4.1.2 Related Fields of Knowledge

Addressing the issue of interdisciplinarity, Saracevic (1996) discusses the interdisciplinary nature of IC and indicates that it is in the attempt to solve problems of information retrieval that interdisciplinary relationships happen. This is due to the need to share knowledge and experiences from different areas and applicable in different contexts.

Pinheiro (2005) points out some key areas: Administration, Computer Science, Librarianship, Linguistics, Law, Archives, Museology, Psychology, Philosophy, Mathematics, Education, Ethics, Statistics, among others. This knowledge-sharing condition is also consolidated in the curricular structure of the General Training Center, as shown in Figure 3.

Figure 3. Related disciplines



Source: Research Data (2018).

The disciplines listed have a close connection with the Administration Area. It is inferred that this happens because Information Science also involves discussions about planning and management of information units, management of informational stocks and innovation in service delivery practices, specifically discussed in the discipline of Entrepreneurship.

The area of Computer Science also presents interface in this list of disciplines, since the discipline of Logic, originated from Philosophy, also develops in Computing from its perspective. In this area too, the Database discipline again appears setting up other interfaces.

5 Final Considerations

This study intends to present the disciplines of the General Training Center implanted in the courses of Archivology, Library and Information Science and to analyze from the epistemological element of the information technology, discussed by Saracevic.

It was possible to verify that the disciplines, from their proposals of contents menus, are aligned within the epistemological perspective of the construction of knowledge and practical application. By treating information as the fundamental element of Information Science, the curriculum structure seeks to establish a close interface between all the stages: search, capture, treatment, storage, retrieval and preservation. These stages are traditionally studied in IC and are presented as common in all three areas.

The question of the technological contribution necessary to support CI's activities are contemplated in several disciplines that, in addition to establishing an interdisciplinary link between themselves and with other areas, also propose to consolidate the fundamental bases for application within a logical and gradual line of construction of knowledge.

It is understood that the epistemological bases of Information Science are preserved in this curricular structure and the interfaces that are established can elicit other studies in the sense of adding other disciplines that, in constant evolution, appear as fundamental in the innovation necessary to meet the training demands and adequacy of the profile of the professional focused on the job market.

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