Aspects regarding the notion of subject in the context of different theoretical trends: teaching approaches in Brazil

Abstract
Teaching in the area of knowledge organization is related to the construction of records in catalogues or databases, bringing together certain elements, such as the notion of subject, into a field designated as “subject information organization”. This study thus aims to observe the notion of subject, as an element of knowledge organization, in Brazilian teaching, according to three different theoretical trends: “subject cataloguing”, “indexing” and “documentary analysis” (“analyse documentaire”). With respect to these three trends, subject information organization was explored on some occasions during three graduate courses and in 13 topics, following meetings between directors and teachers of library science schools from Mercosul countries. We conclude that the notion of subject should be more deeply studied considering the marked differences between the three theoretical trends mentioned, and in order, among other things, to better understand and promote curriculum proposals, which should be based on theoretical and methodological keystones, in place of aspects of teaching focused on the functioning of widely known tools.

Introduction
The field of knowledge organization (KO) involves understanding the theoretical fundamentals related to the notion of subject in the context of subject information organization (in Portuguese, tratamento temático da informação – TTI). Esteban Navarro and García Marco (1995) say that KO aims to study the fundamentals and planning techniques, construction, management, use and evaluation of description systems, cataloguing, arrangement, classification, storage, communication and document retrieval. Regarding document content, in relation not only to structure but also to the subject – being the second the interest of this study –, information production is ensured through the documentary record, enabling the generation of new knowledge.

KO is considered as part of library and information science (in Portuguese, biblioteconomia e ciência da informação), and in Brazil it is usual, though not the consensus, that library science is taught at undergraduate level while information science is taught at graduate level. In this study, we considered the necessary dialogue and connection between these two academic levels, acknowledging that teaching of library science in undergraduate courses is bolstered by graduate activities, and indeed that the opposite also occurs. The first Brazilian master’s courses in the field emerged in the early 1970s and were designated as “library science”, nowadays referred to as “information science” – with the exception of the first course in the area to be developed in Brazil, at the Instituto Brasileiro de Bibliografia e Documentação (IBBD), now Instituto Brasileiro de Informação em Ciência e Tecnologia (IBICT) (Mueller 1985).

In general, the name “library science”, in Brazil, is used to refer to the profession
and to undergraduate courses, as listed below.

One of the forums for debating areas of research in the field of KO in Brazil is the National Meeting of Research and Post-Graduation in Information Science (Encontro Nacional de Pesquisa e Pós-Graduação em Ciência da Informação – ENANCIB), set up by the National Association for Research and Post-Graduation in Information Science (Associação Nacional de Pesquisa e Pós-Graduação em Ciência da Informação – ANCIB). According to Barreto (2009, 13), the ANCIB was founded in 1989, in Brasília, with the aim of: “promover o desenvolvimento da pesquisa e de estudos avançados da Ciência da Informação e Biblioteconomia no País”, as its founding statute indicates, approved by the General Assembly on June 23, 1989, at the X National Meeting of Postgraduate Courses in Library Science, Documentation and Information Science (X Encontro Nacional de Cursos de Pós-graduação em Biblioteconomia, Documentação e Ciência da Informação). Nowadays, the ANCIB website states that “sua finalidade é acompanhar e estimular as atividades de ensino de pós-graduação e de pesquisa em Ciência da Informação no Brasil”. Notice that the letter B remains in the acronyms for both the association and the meeting but is no longer present in the extended names.

Besides issues of naming, the aim of this study is to analyze the notion of subject, as an element of KO, in Brazilian teaching, according to three different theoretical trends: subject cataloguing, indexing and documentary analysis (analyse documentaire). Therefore, in view of these three trends, subject information organization (TTI) was explored on some occasions during three graduate courses and in 13 topics, following the meetings between directors and teachers of library science schools from Mercosul countries.

Construction of Knowledge Organization and the Brazilian context: three theoretical trends regarding the notion of subject

At an international level, Ingetraut Dahlberg, in 1977, founded the Society for Classification, aimed at involving researchers interested in classification in both theoretical and practical study. It discussed development of formal and mathematical methods to recognize classes of objects according to their characteristics, using tools

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1 “promoting the development of research and advanced studies in library and information science in the country”.
2 “its function is to accompany and stimulate the activities of graduate teaching and research in information science in Brazil”.
3 Curriculum studies in library science in Mercosul (in Spanish Mercosur) countries began following Program III of the Mercosul Plan for Regional Educational Development, which has involved joint cooperation of the Ministries of Education from Argentina, Brazil, Paraguay and Uruguay for some events.
like the thesaurus, for example (Dahlberg 1995). However, the studies of the Society for Classification were guided by the interests of one major council group – namely that of mathematics – and, due to this, Dahlberg left the Society to launch ISKO in 1989, remaining its president until 1996. Dahlberg’s conception led to KO being considered as an autonomous science (Dahlberg 2006).

Taking the international scene as an example, in Brazil, studies on KO were led by bibliographic classification, as in the specialization course in Information and Documentation, created in 1955, at the IBBD. However, according to Sales (2016), intensification of KO activities has occurred due to two main events: the creation of the first information science graduate course in the country, in 1972, at the IBBD, nowadays IBICT; and the launching of ANCIB, in 1989, in particular the work of research group number two (GT2), now called Organization and Representation of Knowledge. It was at ENANCIB, in 2007, in the context of the activities of GT2, that the chapter of ISKO-Brazil was established.

On a wider scale, the development of the first master’s courses in the 1970s, and the creation of ISKO International and of ANCIB, in 1989, led to more significant areas of discussion within KO.

In the context of these discussions about KO, Guimarães (2008, 2009) indicates that Anthony Charles Foskett was responsible for the rationale of the epistemological universe which, in Brazil, was designated “subject information organization” (tratamento temático da informação – TTI) in Brazil. According to Guimarães (2008, 78), this name became known from the 1970s onwards, especially because of Foskett’s book, “The Subject Approach to Information”, first published in 1969 and translated by A. A. Briquet de Lemos as A abordagem temática da informação (Foskett 1973). Guimarães (2008) mentions the influence of the expression in the teaching of library science in Brazil, when the designations “thematic representation” and “descriptive representation” substituted the names “classification” and “cataloguing”, within the framework of the Library Science Minimum Curriculum of 1982.

Guimarães (2008, 2009) points out that during the history of KO, there have been three distinct theoretical trends focusing on thematic aspects of KO, namely the North American “subject cataloguing”, British “indexing” and French “analyse documentaire” (in Portuguese referred to by the author as “análise documental”)\(^4\). Thus, “[...] hoje encontram importante espaço de interlocução no âmbito da

International Society for Knowledge Organization (ISKO)”\(^5\) (Guimarães, 2008, 79). According to the author, the three trends differ in aspects of their theory and methodology and were developed in different places, as shown below.

“Subject cataloguing” refers to the development of catalogues according to subjects, first developed in the United States of America, at the Library of Congress, where in 1876 Charles Ammi Cutter codified the rules establishing the formation and control of alphabetical subject headings.

“Indexing” developed from the British interest in the elaboration of subject indexes, which became increasingly more structured, particularly due to specialized information services, especially the publication of periodicals, which culminated in the middle years of the 19\(^{th}\) century, at Yale University, with the publishing of William Frederick Poole’s index, named “An alphabetical index to subjects treated in the reviews and other periodicals”. This trend was later enhanced by the studies of the Classification Research Group (CRG), also in England, in the 1950s and 60s, which conducted research based on Ranganathan’s classification.

The third and youngest thematic trend in KO, “analyse documentaire”, was developed by the French, from the perspective of documentation, in the context of research that involved information recovery methodologies and tools, with the support of linguistics. Marcel Van Dijk, Maurice Coyaud, Jacques Chaumier, Jean-Claude Gardin, are important names in this area. As an example of this trend we highlight the “syntagmatic organization language” (SYNTOL), built in the 1960s, by Gardin and his team. Being the principal of the Centre de Recherches Archéologiques (CNRS), Gardin aimed to develop the method of systematization to analyze and classify scientific papers more strictly. The approach followed by this trend was well characterized, especially in Spain, by many researchers, such as: Félix Sagredo Fernández, José María Izquierdo Arroyo, Antonio Luis García Gutiérrez, María Pinto Molina, Mónica Izquierdo Alonso, among others.

Another important issue is that the trends outlined with respect to ordering KO each display characteristics that, according to Guimarães (2003, 2008), involve moments of, respectively, art, technique and methodology construction. The first moment was guided by “um talento especial, uma verdadeira habilidade artística em que o emprego do bom senso se aplica a um processo altamente intuitivo: a determinação do conteúdo do documento e sua consequente nomeação”\(^6\) (Guimarães 2003, 104).

The second trend, in the 19\(^{th}\) century, focused on techniques and tools developed

\(^5\) “[...] nowadays there is a significant interlocution space in the scope of the International Society for Knowledge Organization (ISKO)”.

\(^6\) “a special gift, a true artistic skill in which the use of common sense is applied to a highly intuitive process: the determination of a document’s content and its consequent designation”.
specifically to address the increasing capacity of bibliographic creation and mass publication, as the production of many identical papers, with no mistakes or alterations, became a reality following the creation and development of the press.

The third and last moment mentioned by the author occurred in the 1950s, with the creation of scientific bases, seeking, in particular, to develop strict methodologies.

We understand that the second and third trends highlighted the investigative practice of KO, in relation to TTI. Despite the theoretical and practical complexity entailed by these trends in ordering information, it is a matter of common sense to make representations that enable effective recovery of a document’s thematic content. It is not only necessary to analyze subject cataloguing, in terms of its principles and respective subject headings, but also to study indexes as devices built on theoretical bases, and, in addition, to verify the principles, methodologies and tools of analyse documentaire, which involves both formal and subject content analysis, or depending on the approach, only thematic content analysis.

**Graduate teaching in Brazil**

In Brazil, the first four master’s graduate courses in library science were created in the 1970s. At Universidade Federal de Minas Gerais (UFMG), the course was named Library Administration and started in 1976, having two main branches: library science and education; and library Science and specialized information (Vieira 1990).

The master’s course at Pontifícia Universidade Católica de Campinas (PUCCAMP) began in 1977 and had one main area: library science teaching methodology (Lima, 2008).

At Universidade de Brasília (UnB), the master’s course started in 1964, but was postponed at the end of 1965 (due to the political situation in the country), and only effectively restarted in 1978, with two main branches: planning, organization, information systems administration; and resources and documentation techniques and scientific information (Mueller 1985).

The master’s course at Universidade Federal da Paraíba (UFPB), which began in 1978, offered public library systems (Lima 2008).

In 1986, the Escola de Comunicação e Artes (ECA), of Universidade de São Paulo (USP), created the master’s in Information Science and Documentation as a main area together with the Communication Science Graduate Program (Mueller 1985).

However, as mentioned before, the first master’s course in information science in the country was created in 1972, at a research institute, the IBBD. It was originated as a specialization course in information and documentation, from 1955, mentioned above. It had two main branches: information systems administration; and information Transference (Lima 2008).

The indicated courses were renamed “Information Science”, except the course at
PUCCAMP, which remained unaccredited during the three-year evaluation period from 2004-2006. More courses were opened in universities all over the country and, at ECA/USP, the graduate course became independent.

Considering the aforementioned three trends in thematic treatment of information, we can perceive their presence (albeit not in quantitative terms) at the three universities mentioned above.

In the 1980s, some papers in the context of subject cataloguing at UFMG can be found in the production of professor Marysia Malheiros Fiuza (1980, 1985, 1987), as Guimarães mentions (2008), probably leading to the current denomination of the undergraduate course program (Universidade Federal de Minas Gerais, online).

The indexing trend grew stronger in Rio de Janeiro, in the 1970s. This had much to do with the fact that following the creation of the master’s course in information science at the IBBD in 1972, and up until 1981, Frederick Wilfrid Lancaster was the foreign professor who supervised the largest number of essays, 34 in total (Robredo, Vilan Filho 2010, 196).

In addition, the trend in analyse documentaire started in Brazil with the research of the Temma Group, founded in 1986, at ECA/USP, due to the initiative of professor Johanna Smit. The publishing of the book Análise documentária: a análise da síntese (Smit 1987) is considered the official beginning of the group (Lara 2011). Moreover, Johanna Smit gained her doctorate in France under the supervision of Gardin, and her partnership with other teachers and researchers from USP has resulted in the expansion and strengthening of this direction of research which has taken place at Universidade Estadual Paulista (Unesp), campus de Marília (Guimarães 2011).

The adoption of the three trends proposed by Guimarães (2008, 2009) enables us to understand the fundamental context of TTI, in the field of KO, because it indicates the construction of the notion of subject. The examples mentioned are part of the path that characterize KO in Brazil, although we recognize that there are other courses and researchers in the country who have similarly embraced KO to a greater or lesser extent.

The precise nature of each of the three trends in question differ in relation to theoretical and methodological aspects regarding the notion of subject. Undergraduate courses in library science have been steadily growing stronger, while contributing to the establishment of one trend or another, as shown below.

**Library Science undergraduate courses: the teachers and heads meetings of Mercosul**

In Brazil, the first minimum curriculum for a course in library science was established in 1962, and in 1982, the new minimum curriculum was approved to substitute the previous one. In 1971, there were 17 library science courses in operation, and by 1977, this number had increased to 28 courses in the country (Mueller 1985).
Nowadays, the number of courses operating in Brazil has reached 40, as outlined below according to the adopted denominations: 30 bachelor degrees in “Library Science”; 2 bachelor degrees in “Library and Science Information”, 2 bachelor degrees in “Library Science and Documentation”; 1 bachelor degree in “Library Science and Sciences Information”; 1 bachelor degree in “Library Science and Information Unit Management”; 1 bachelor degree in “Library Science, enabling in Information Management”; 1 teaching degree in “Library Science” and 2 bachelor degrees in “Information Management” (Associação Brasileira de Educação em Ciência da Informação, online).

The Brazilian territorial expansion explains the quantity of courses being provided and their different names makes us suppose they have different conceptions, which needs to be verified. Thus, the notion of subject suggests processes and representation tools to apply to the thematic content of academic papers. In the search for conceptions and guidelines for pedagogical practices, there have been discussions between teachers and heads of courses. This movement was instigated 14 years after the second minimum curriculum.

Guimarães, Danuello and Menezes (2004) have said that from 1996 on, stimulated by the creation of Mercosul, a joint curriculum integration initiative was implemented in 43 undergraduate courses in library science from Argentina, Brazil, Chile, Paraguay and Uruguay. The inception of this project recalls the III Encuentro de Docentes e Investigadores em Bibliotecología, Ciências de la Información y Archivologia (EDIBCIC), which took place in San Juan de Puerto Rico. These courses have defined seven areas for the undergraduate teaching, namely: Theoretical Foundation of Library and Information Science; Information Processing; Resources and Information Services; Information Technology; Information Units Management; and Professional Research and Practice.

Additionally, in 1996, the I Encontro de Diretores de Escolas de Biblioteconomia do Mercosul was held in Porto Alegre, which was a remarkable event in the history of Latin-American library science teaching, as it tried, for the first time, to discuss teaching issues. The process towards an integrated curriculum began through analysis and synthesis of the minimum content registered in the subject syllabus of the thematic areas (Guimarães, Danuello, Menezes 2004).

At the II Encuentro de Directores y I de Docentes de Cursos Superiores de Bibliotecología del Mercosur, which was held in Buenos Aires in 1997, in-depth discussion of the syllabus took place between the six working groups related to the previously defined areas (with the exception of the Professional Practice group, since its internal characteristics required institutional discussion) (Guimarães, Danuello, Menezes 2004).

At the abovementioned II Meeting, information processing – the main curriculum
area of this paper – had its name changed to “Information Organization and Treatment”. The participants in the discussion reported that it was difficult to work with contents stemming from different theoretical currents. Thus, Guimarães, Danuello and Menezes (2004, 2) show the necessity for this area to be disconnected from a conception focused on products and transformed into one that focuses “[…] com mais clareza [na] sua própria dimensão teórica, com especial contribuição dos estudos de Organização do Conhecimento (inclusive com inclusão explícita desse termo na ementa) […]”⁷. Therefore, 1997 saw the first use of the designation “knowledge organization” in a formal teaching proposal for library science course content in Brazil.

However, only in 2000, at the IV Encuentro de Directores y III de Docentes de Escuelas de Bibliotecología del Mercosur, in Montevideo, the area “Information Organization and Treatment” presented reports from different schools, country by country, in relation to the methodological-theoretical issues in the field. Guimarães, Danuello and Menezes (2004) systematized 13 topics about the teaching of KO in Brazil, which has informed discussion of the teaching in the countries involved. The theoretical trends presented above result from the bibliography used by Guimarães and coworkers for the production of 13 topics, as follows:

1. Theoretical-conceptual aspects of subject information organization
2. Historical evolution of subject information organization
3. Theory of Knowledge Organization
4. Theory of the Concept (Dahlberg)
5. General Theory of Terminology (Wüster)
6. Classification in Archives, Libraries and Museums
7. Documentary reading
8. Documentary analysis
8.1 Concept identification
8.2 Concept selection
9. Documentary condensation (abstracts)
10. Documentary representation
10.1 Alphabetical documentary languages
10.1.1 Subject headings (Cutter)
10.1.2 Thesaurus
10.2 Notational documentary languages (bibliographic classifications)
10.2.1 Dewey’s decimal classification
10.2.2 Universal decimal classification
10.2.3 Faceted classification (Ranganathan and C.R.G.)
10.2.4 Library of Congress classification
10.2.5 Specialized classifications
11. Indexing systems and methods
12. Indexing politics
13. Information retrieval

In Brazil, from 2001 on, national curriculum guidelines for undergraduate courses

⁷ “[…] more clearly on its own theoretical dimension, with the special contribution of knowledge organization studies (and, moreover, with the explicit inclusion of this designation in the syllabus) […]”.
(Brasil 2001) were approved, aimed at leading to the development and implementation of political-pedagogical projects in university education institutions. As a result of continuing discussions, the minimum curriculum of library science was thus substituted by a more flexible curriculum based on these national guidelines.

Regarding the 13 topics listed at the Mercosul Meeting in 2000, about teaching in information organization and treatment, the notion of subject is linked to each of the denominations, as was expected. However, for an accurate analysis, it would be necessary to have the syllabus of each topic, so we would not suppose content for an expression that can have many meanings.

We observe in topic 4, the Dahlberg’s concept theory, whereby concepts are seen as knowledge units that connect to make up subjects. A similar relation can be established in topic 5, Wüster’s general theory of terminology, with regard to the element term-concept as a unit of meaning.

In topic 6, “Classification in Archives, Libraries and Museums”, we can debate the importance of the notion of subject in archiving and museology, and consequently question the use of the expression in library science, since the concept-theme “aboutness” and indeed other expressions widely used in the area have no consensual Portuguese translation.

Topics 7, “Documentary reading”, and 8, “Documentary analysis” indicate stages towards reaching the materialization of the document subject. Topic 9, “Documentary condensation (abstracts)” refers, initially, to a specific process and, subsequently to the product of this process (abstracts themselves), not forgetting to mention the difference between them, as they are presented as synonyms. The last stage, that of translation, is incorporated in topic 10, “Documentary representation”, in which many document tools of classification and indexing are indicated. The division displayed is done using codifications or words, respectively, notational or alphabetic documentary languages.

The last three topics, which are 11, 12 and 13, show systems aspects, methods and indexing politics, leading, lastly, to information retrieval.

The theoretical trends relating to TTI and how they systematize the 13 topics of teaching contents with respect to the same area, raises the following issues.

The division of documentary language types into formal aspects, as codifications and words, which is usual to Anglo-American approaches, is not adopted by the analyse documentaire trend. However, the adjective documentaire (documentary) as adopted to languages stems from that direction of thematic analysis. The term “documentary condensation”, given to the process of elaborating abstracts, is also a construction of the analyse documentaire trend. The subject cataloguing and indexing trends may not be so easily discriminated in Brazil, yet they are widely used all over the country as a reflection of the Anglo-American literature adopted here. Besides, the scientific and
curricular production makes the difference between the currents disappear, generally creating other differences.

Moreover, the expression “subject information organization”, in topics 1 and 2, seems to be a Brazilian proposal, developed from Foskett’s 1973 book and from other influences, since the term “classification” stopped being used to refer to the thematic aspects of KO.

**Final considerations**

The presentation of teaching approaches followed in Brazil allows us to observe basic elements about the notion of subject in KO, but it is only a partial view. This paper has not looked at other authors’ understanding about the composition of theoretical trends, nor has it given much attention to teaching matters. Even so, by highlighting one author’s point of view, namely that of Guimarães, we can get a clear picture of the various aspects regarding the notion of subject, of the theoretical trends in treating thematic elements and of Brazilian teaching.

The notion of subject must be studied more deeply so that the three theoretical trends mentioned can be compared, thus enabling better comprehension of and contribution to curriculum proposals, based on theoretical and methodological keystones, in place of aspects of teaching focused on the functioning of widely known tools.

The abovementioned studies should be continued, combining the work of different research groups, and more literature will no doubt be developed in this area, with the aim of understanding the prospects for teaching knowledge organization and the notion of subject, and thus enabling the planning of concrete actions to address the issues that must be solved.

If, on the one hand, understanding the theoretical bases that support knowledge organization and, moreover, understanding the notion of subject are necessary to thematic representation, on the other hand, their consolidation would allow a greater connection between undergraduates, graduates and research activities in library and information science.

**References**


