

Organization Schemes in Institutional Repositories from Federal Universities

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Abstract. In Brazil, institutional repositories have been adopted by universities with the purpose of disseminating their intellectual production. However, very little is discussed about the organization of these repositories, as it directly affects the classification and location of the documents. The objective of the study is to analyze the various forms used in the organization of university repositories maintained by the government. A study to support the discussion on a relatively unexplored subject, but that affects the usability and accessibility of the archives. Results show that most repositories represent the hierarchical structure of the university in the repository, with little use of thematic organizations. This reveals the need for studies to support the organization of academic systems on such systems.

Keywords: Institutional repository · Organization scheme · User navigation

1 Institutional Repositories

Institutional Repositories (IR) are adopted by colleges and universities as a way to provide greater visibility to their academic work. With this, many authors have discussed about these tools, Bjork [1] in his scholarly communication model, places the IRs as access facilitators; Leite and Costa [2] see IRs as knowledge management tools; Harnad et al. [3] consider the IRs as the green way to open access. Usually, content stored in an IR can be indexed and structured recovered from different search engines. However, word searching is one of the different interaction strategies for discovery of documents and materials deposited in these repositories. Among other strategy for the discovery of documents in IRs is browsing by links and categories organized under an organizational scheme, such as task-oriented, audience, topic, alphabetical, chronological, geographical, metaphors or even hybrid schemes [4].

In the case of browsing, the organizational scheme used in IR content structuring influences the document recovery processes, requiring the user knowledge over such structure in order to retrieve the content. The more representative the organization scheme is for the user, the easier are navigation and content retrieval tasks. In this context, the study investigates the organization schemes of information present in

institutional repositories of federal universities and analyzes them on principles of web information architecture.

2 Methods

This is an exploratory study aimed to identify repositories organization schemes. Thirty-five (35) IRs were identified linked to universities geographically distributed across the country, a sample that represents 55 % of Brazilian federal universities.

All repositories analyzed are using DSpace, an open-source software widely used in Brazil [5]. DSpace allows hierarchical organization of content grouping items into Communities, Subcommunities and Collections. This organization guides local navigation, it is complemented by contextual navigation systems such as facets filtering, where metadata fields can be used as filters in the items list, and also search mechanisms.

3 Results

In the analyzed repositories it was identified the prevalence of organization schemes driven by topics, with three main patterns of schemes for organizing information: oriented by institutional structure; guided by the knowledge areas and oriented by document's types, besides the significant presence of hybrid scheme, mixing elements of different schemes of representation on the same hierarchical levels (Fig. 1).



The image shows the RIUFOP (Repositório Institucional Universidade Federal de Ouro Preto) website. The header includes the RIUFOP logo and the UFOP (Universidade Federal de Ouro Preto) logo. Below the header, there is a search bar and a navigation menu. The main content area is titled "Comunidades e Coleções" and lists several categories with their respective counts:

- CEAD - CENTRO DE EDUCAÇÃO ABERTA E A DISTÂNCIA** [59]
 - CFAD - Artigos publicados em periódicos [48]
 - CFAD - Livros e capítulos de livros [1]
 - CFAD - Trabalhos apresentados em eventos [10]
- CEDUFOP - CENTRO DESPORTIVO DA UFOP** [53]
 - DEEFD - Departamento de Educação Física** [53]
 - DEEFD - Artigos Publicados em Periódicos [52]
 - DEEFD - Livros e Capítulos de Livros [1]
 - DEEFD - Trabalhos Apresentados em Eventos [0]
- EDITORA UFOP** [21]
 - Ciências Biológicas [0]
 - Ciências da Saúde [3]
 - Ciências Exatas e da Terra [0]
 - Ciências Humanas [10]
 - Ciências Sociais Aplicadas [4]

The navigation menu on the left includes options like "Buscar", "Pesquisa Avançada", "Página inicial", "Visualizar", "Data de emissão", "Autor", "Título", "Assunto", "Entrar", "Atualizações por e-mail", "Meu espaço", "Usuários autorizados", "Editar Perfil", "Ajuda", and "Sobre o DSpace".

Fig. 1. Navigation oriented by organizational scheme based on administrative structure at <http://www.repositorio.ufop.br/>.

The frequency of different schemes found in the repositories are shown on Table 1.

Table 1. Document organization schemes found in institutional repositories of Brazilian federal universities.

Community	Subcommunity	Collection	#	Example
Campus	Program/department	Document type	12	http://repositorio.unb.br/
	College/course	Document type	3	http://repositorio.bc.ufg.br/
	Document type	Course	1	http://200.129.241.122/
Center	Program/course	Document type	1	http://guaiaca.ufpel.edu.br/
College	Program/course	Document type	2	http://repositorio.ufjf.br/
Occupation Field	–	Document type	2	www.utfpr.edu.br/riut
Document Type	Campus	Center	1	http://www.repositorio.ufal.br/
	Knowledge area	Course	1	http://www.locus.ufv.br/
	Great knowledge area	Knowledge area	1	http://dSPACE.unipampa.edu.br:8080/xmlui
	Document subtype	Knowledge area	1	http://www.lume.ufgs.br/
	Program	Course	1	http://repositorio.uft.edu.br/
Knowledge area	College/department/Course	Document type	3	http://ri.ufs.br:8080/
Hybrid	Hybrid	Hybrid	6	http://dSPACEprod02.grude.ufmg.br/

Another form of organization found was by document type, where the user chooses between the kind of academic work, and then choose the area of knowledge or the associated institutional program. Figure 2 shows an example of this organization scheme.

A third type identified was navigation guided by organization schemes based in knowledge areas, where the user initially selects the area of knowledge wanted to access, then the administrative department, and finally the type of document. As illustrated in Fig. 3.

In some cases, form of hybrid organization was identified, using schemes of different natures in the organization of communities, sub-communities and collections, as presented in Fig. 4.

A summary of the survey is shown in Fig. 5: three different organization schemes of collections in repositories were identified, with prevalence of the schemes representing administrative structures. In universities such organization schemes are almost unanimously, considering that universities have stable administrative structures, known and accepted by academia, with intrinsic thematic representation, having a disciplinary organization based on knowledge classification, as in mathematics, physics or chemistry departments. However, classification of scholar works from interdisciplinary courses can be problematic under this approach.

The screenshot shows the Locus UFV website. At the top left is the Locus UFV logo. At the top right is the Universidade Federal de Viçosa logo. Below the logos is a navigation bar with 'Página inicial' and 'Entrar' links. The main content area is divided into several sections:

- Buscar no Repositório:** A search box with a 'L' button.
- Navegar:** A menu with options: 'Por todo o repositório', 'Seções e Coleções', 'Por data do documento', 'Autores', 'Títulos', and 'Assuntos'.
- Minha conta:** Links for 'Entrar' and 'Cadastro'.
- Explorar por:** A list of authors and their document counts:
 - ESAV (410)
 - Almeida, Thomé Vidgal de (3)
 - Brustolini, Otávio José Bernardes (3)
 - França, Michelle Mitanez (3)
 - Lalle, Carla Daniela Sugimoto (3)
 - Marques, Felipe de Azevedo (3)
 - Silva, Priscila Vandramini (3)
 - Silveira Neta, Juliette de Jesus da (3)
 - Sousa, Katiene Régia Silva (3)
 - Táburcio, T. M. S. (3)
 - ... Ver mais
- Bem vindo ao Repositório Institucional da UFV:** A welcome message stating the repository is in the implementation phase.
- Seções no Repositório:** A list of document types with counts:
 - Eventos UFV [44]
 - Memória Institucional [411]
 - Produção Técnico-científica [0]
 - Teses e Dissertações [6549]
 - Trabalhos Acadêmicos [0]
- Submissões recentes:** A section for recent submissions, including:
 - Estudo do tempo de eficiência das insulinas de DNA recombinante via modelos para testes de vida acelerados:** By Sousa, Patricia de (2015-07-30).
 - Choice-Based Conjoint Analysis: um enfoque bayesiano:** By Barbosa, Eduardo Campana (2015-02-25).
 - Número de repetições na identificação de genes diferencialmente expressos em experimentos de RNA-Seq:** By Amaral, Regiane Teodoro do (2015-02-27).

Fig. 2. Navigation by document type at <http://www.locus.ufv.br/>

The screenshot shows the RIUFS website. At the top left is the RIUFS logo. At the top right is the UFV logo. Below the logos is a navigation bar with 'Repositorio Institucional >' and 'Entrar' links. The main content area is divided into several sections:

- Pesquisa rápida:** A search box with an 'Enviar' button.
- Pesquisa avançada:** A link to the advanced search page.
- Página principal:** A link to the home page.
- Percorrer:** A menu with options: 'Comunidades & Coleções', 'Data de publicação', 'Autor', 'Título', 'Assunto', and 'Tipo'.
- Entrar:** Links for 'Serviço de alertas', 'Área Pessoal', and 'Editar conta'.
- Pesquisa simples | Pesquisa avançada:** A search box with an 'Enviar' button.
- Comunidades no repositório:** A list of communities with document counts:
 - Ciências Agrárias Aplicadas [162]
 - Ciências Biológicas e Saúde [397]
 - Ciências Exatas e Tecnologia [204]
 - Ciências Sociais Aplicadas [142]
 - Educação e Ciências Humanas [231]
- Footer:** Includes logos for Creative Commons, OJS, and DSpace Software, along with copyright information: 'Copyright © 2002-2009 The DSpace Foundation - Comentários'.

Fig. 3. Navigation area of knowledge at <https://ri.ufs.br/>



Fig. 4. Navigation oriented by hybrid schemes at <https://repositorio.ufma.br/>

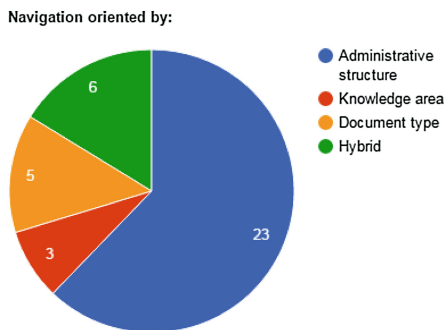


Fig. 5. Distribution of content organization schemes in repositories (Color figure online)

4 Conclusion

Hybrid organizational schemes appear in the survey in the intent to concile categories belonging to different organizations, in order to better classify institutional work. According to [4] “it is often difficult to agree upon any one scheme, so people throw the elements of multiple schemes together in a confusing mix” (p. 68). This reveals the need for studies aimed at organizing collections in such repositories.

Finally, the representation of the institutional structure in the organization of repositories can reveal the urgency in taxonomy studies for classification of items, since many users may not be familiar with institution's structure. Also, in some cases, a course and its intellectual production may be linked to different faculties or departments, complicating documents recovery under this structure, lowering usability.

References

1. Björk, B.C.: Scientific communication life-cycle model (2005). <http://oacs.shh.fi/publications/Model35explanation2.pdf>
2. Harnad, S., et al.: The access/impact problem and the green and gold roads to open access (2004). <http://eprints.soton.ac.uk/265852/2/serev-revised.pdf>
3. Leite, F.C.L., Costa, S.M.S.: Repositórios institucionais como ferramentas de gestão do conhecimento científico no ambiente acadêmico. *Perspectivas em Ciência da Informação* **11** (2), 206–219 (2006)
4. Morville, P., Rosenfeld, L.: *Information Architecture for the World Wide Web*, p. 504. Sebastopol, O'Reilly Media (2006)
5. Murakami, T.R.M., Fausto, S.: Panorama atual dos Repositórios Institucionais das Instituições de Ensino Superior no Brasil. InCID: Revista de Ciência da Informação e Documentação, Brasil, 4(2), pp. 185–201, dez. 2013. ISSN 2178-2075. <http://dx.doi.org/10.11606/issn.2178-2075.v4i2p185-201>