ReNPAD: a brazilian network for researchers in High Dilution

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ABSTRACT

Some pertinent questions in the practice of science is to know what one is researching, with whom and where. These questions are even more crucial for those involved in High Dilution studies, an emergent and multidisciplinary scientific field, where concepts, methods and models are still to be validated. In this research field, such questions can be addressed through networks because communication between peers accelerates the process of conceiving and refining the concepts, methodologies and standards that give consistency to emergent knowledge. A thematic network can be effective in building an identity for the science of HDs and related community. This article introduces the project ReNPAD (National Network of Researchers in High Dilutions), a Brazilian initiative aiming to put together researchers involved in studies in HDs in order to stimulate interaction and give visibility to the theirs efforts.

Keywords: ReNPAD, high dilutions, database, researchers, networks.

Introduction

Networking is an essential part for all areas of human activity, from trade to cultural or even concerning social relations. Networks are not a characteristic unique to technological societies, but undeniably that the current state of technology, especially due to the “digital revolution”, favors as never before the establishment of a wide variety of networks. Technology has brought new mechanisms, concepts and possibilities making time and space no longer limiting factors for intense human interaction.

Networks can show a great diversity in terms of goals and topologies. However, all have in common the sharing of information and in this regard, the scientific community is a major beneficiary from networks for the dissemination of general information about research and researchers. The advent of Open Source [1,2] in Computer Science, Open Access [3-5] in the publishing community and Creative Commons license [6,7] in copyright relations are contemporary examples of the 2-way cooperation between individual talent and communities.

Many countries, institutions and communities display their members in directories along with a range of relevant individual activities or collective actions as well some tools to manage such data. An example is the curriculum vitae database integrating the Lattes Platform [8] sponsored by Brazilian CNPq (National Research Council for Scientific and Technological Development) [9] widely used by many institutions as standard information system. Lattes' Curriculum vitae (CVLattes) centralizes information on Brazilian

researchers as well as other with links to the country. It is an open access platform where information can be retrieved with the help of search engines and filters.

Pertinent questions in the practice of science is to know what one is researching, with whom and where. In classical, well-established and delimited areas, queries into CVLattes can disclose valuable information for many types of requests. However, the same is not true for emerging areas where concepts are still in the making, keywords are not well defined and researchers have no connections one with another [10]. In such areas, the search for specific information beats against a multiplicity of non univocal terms and metadata. The same happens in multidisciplinary areas as each contributing discipline brings together its own jargon and conventions, affecting the communication and the interaction among researchers, reducing the effectiveness of searching procedures.

In emerging areas of research, such questions can be addressed through networks because communication between peers accelerates the process of conceiving and refining concepts, methodologies and standards that give consistency to emergent knowledge.

Thematic networks can be effective in building an identity for such emergent and multidisciplinary fields, since implementation does not require more effort for members than those required by governmental or institutional networks. This article introduces project ReNPAD (National Network of Researchers in High Dilutions), a Brazilian initiative aiming to put together researchers involved in studies in High Dilutions, in order to foment interaction and give visibility to the theirs efforts.

Statement of the Problem

CVLattes database has around 1,100,000 curricula. Thirty one percent of them belong to researchers holding a PhD/DSc or a MA/MSc degree and to postgraduate students, whereas the remaining 59% belong to undergraduate students and graduate individuals (holding BA/BScs, MDs, etc.) The number of PhD/DScs registered in this database reveals the predominance of the Natural Sciences and the Humanities, followed by the Health Sciences, Biological Sciences and Engineering. This database also records around 4,000 institutions in Brazil, including educational, business, non-profit private organizations and governmental ones [11].

Browsing the database [12] allows one to find researchers working in specific areas. Let us consider, as a special case, those involved with the multidisciplinary field of High Dilutions (HDs). Actually, “HDs” is a recently proposed and still not widely spread term to refer to what traditionally was known as “homeopathic preparations”, i.e. agitated dilutions of matter above Avogadro’s limit. Up to the present time, nevertheless, a search had to use as keyword “Homeopathy”.

The results of a search into CVLattes carried out in February 2008 and November 2009 to identify individuals in general, and PhD/DScs in particular linked to “Homeopathy” are described in Table 1.

Table 1: Data retrieved from Lattes Plataform

	February 2008	November 2009
Total number of CV	1755	2291
Number of PhD/DScs	740	849

Assuming that these data faithfully reflect the interest of Brazilian researchers in homeopathy, it can be concluded that there was an increase in both individuals in general and PhD/DScs in particular. Therefore, it would seem that there is a significant number of Brazilian researchers involved somehow in homeopathy; sub-data not shown would point to a formally well-established, decentralized and multidisciplinary community. However, further analysis of these data indicates that this is not the case, but pretty much the opposite.

Many of these CV belong to professionals with slight, if any interest in this subject: some were retrieved through cross-references or some isolated activity (interviews, press releases, etc.); others, due to a single article on homeopathy, most usually expressing a personal opinion – which, naturally, cannot be equated by default to mastering the field. The application of multiple exclusion criteria, consequently, decreases in a significant way the number of actual researchers involved in HDs.

On the other hand a paradoxically, many researchers actually involved in homeopathy/HDs have been left out in this search due to use of different systems of keywords to describe their work, as e.g. “dynamized substances”, “potentized substances”, “ultra dilutions”, “ultramolecular solutions”, “infinitesimal solutions”, among others, all terms used to describe the same object of study. Consequently, more elaborated inclusion criteria would add more number of researchers within the range of interest on the issue.

Multidisciplinarity also contributes to bias the search. It has been observed in recent years an increasing use of HDs in agronomy [13] and veterinary [14,15], not necessarily consistent with the theoretical framework of homeopathy but equally challenging Avogadro’s limit. Physicochemical [16-18] and history/philosophy of science studies [19-21] are also contributing to this subject. However, as each discipline uses its own keywords information is lost.

To summarize, CNPq database does not fit well the HDs researchers’ community. On the other hand, there is not one single directory, database or searching engine worldwide able to locate and bring together such researchers. Therefore, project ReNPAD seeks to fill in this gap by introducing a database where researchers actually involved in HD research will be able to exchange information with peers in a steady base. ReNPAD, thus, is a network aiming at contributing to the institutionalization and identity-formation of a multidisciplinary scientific community with specific interests and common problems that can contribute to new scientific and technological advances, with strong impact in the areas of health and environmental issues.

ReNPAD features

ReNPAD comprises a system of scientific and technical information, implemented through the use of free software, open for consultation to all interested parties and may be linked with other information systems. Some basic principles applied during to the conception of the ReNPAD were:

- Registration and membership must be voluntary;
- Public and free access to all stored information (except passwords);
- Presence of a moderator to ensure compliance with the goals of ReNPAD and prevent abuse or misconduct;
- Web interface;
- No storage of articles, but only the references to them;
- All information inserted is under responsibility of those who register them.
- The system is developed using free software and source codes are available under request.

The first version of ReNPAD was launched in October 2008 [22]. That version was designed to register only researchers belonging to formally established groups registered at CNPq database. Also, only the link to CVLattes was automatically registered whereas scientific production had to be inserted on an individual base, requiring much labor from members. As a result, this version was poorly accepted by the community.

The second version was designed to solve these problems [23]. The requirement to belong to a CNPq research group was removed and registration was open to any researcher with a CVLattes. This constraint represents a weak quality filter to select people involved in research in Brazil. Moreover, to have data inserted and updated at CVLattes opens the possibility to transfer them to ReNPAD, through an XML file, removing the high cost and undesirable procedure of retyping them. As researchers generally work areas other than HD, their CVLattes carry much information not related to HD. Thus, a thematic filter was developed through comparison to some pre-defined keywords in order to highlight information truly related with HD.

This version will be available in January 2010 and will be restricted to registration, search and suggestions. As members register, new functionalities and tools will be offered. The main objectives of ReNPAD are: 1) to list Brazilian researchers involved in HD; 2) to increase the visibility of their research; 3) to stimulate interaction between researchers.

The development of an open access database gathering researchers involved in HD would only make sense if the data included are complete and the registration procedure is easy and fast. These conditions were fulfilled by the current version. The registration procedure runs in 3 steps: data import, filtering and confirmation.

Data import is done through an XML file generated by the user him or herself, inside CVLattes Platform (only public data informed to CNPq are transferred to ReNPAD). Then, the XML file must be uploaded into ReNPAD website. In this way, users only need updated the CNPq database and synchronize it with ReNPAD.

The imported data are compiled in order to classify them in categories (e.g.: articles, abstracts, thesis, lectures, etc.) and to highlight relevant information by comparing typical keywords (e.g.: homeopathy, high ultra extreme dilutions, Hahnemann, etc.). Then, the now classified data are presented to the user for verification (select/unselect data) and submission agreement; only the selected data, related to HD, are inserted into ReNPAD. Once data have been inserted, they can be retrieved by a search engine.

Users are encouraged to send suggestions to the developers through a special interface.

Discussion

The study of HDs is a very exciting emerging field, because it challenges researchers to reflect about the current formally established knowledge and to search for new concepts, methods and models [10]. The more organized the scientific community dedicated to HD, the more intense the interactions between parties favoring the generation of the knowledge necessary to deal with this phenomenon [24-25]. This collective effort is essential to achieve the respect of peers, as well from society as a whole. For managers and policymakers, the scientific understanding of the biological actions of HD can be crucial for the implementation of public policies, from local governments all the way up to the World Health Organization. HD application in agriculture and veterinary can help in the sustainable production of food. Health-care professionals and the population in general, could decide for safer and more effective treatments. For researchers, it is a new area opening up, whose concepts and methods are still under construction.

In this context, ReNPAD can help all, as a specialized database where researchers can make visible their production and look for scientific collaboration, while general users can follow the advances in HD research. As far as the authors know, this project is original, with no similar in the HD community.

Despite ReNPAD was launched only for the Brazilian community and is based on Lattes Plataform, it can be adapted to others communities in different countries. The mechanism for data insertion, based on an XML format favors the spread of ReNPAD-like projects all over the world, synchronized with different curriculum vitae platforms. Eventually, all databases can be centralized or put in connection, establishing a single world network dedicated to HD researchers. As ReNPAD is a collective work, is open to suggestions from users and encourages the collaboration with new developers.

Conclusions

In the current world, where information is one of the most powerful factors, networking is essential. In the practice of science, to know what one is researching, with whom and where is very important because distances and time are no longer limitation factors for collaboration and collective productions.

In this context, ReNPAD came to fill a gap between the reality of isolated or unknown researchers and groups and the need for collaboration with peers. The increase of researchers' visibility as well as the specificity of the information available can act as factors of leverage in an emerging field, which has already demonstrated its importance for the construction of transdisciplinary knowledge.

Thus, ReNPAD is a unique and feasible initiative, with reachable objectives as well scientific, technological, social and environmental relevance.

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ReNPAD: Rede Nacional de Pesquisadores em Altas Diluições

RESUMO

Algumas questões importantes para o desenvolvimento da Ciência é saber quem está pesquisando o quê, com quem e onde. Estas questões são ainda mais relevantes para aqueles envolvidos com pesquisas em Altas Diluições, um campo científico emergente e multidisciplinar, cujos conceitos, métodos e modelos ainda estão por serem validados. Assim como em outras áreas, muitas questões podem ser tratadas com o auxílio de redes porque a comunicação entre pares acelera o processo de concepção e refinamento de conceitos, metodologias e padrões, o que dá consistência ao conhecimento emergente. Uma rede temática pode ser eficaz na construção de uma identidade para a Ciência das Altas Diluições e toda comunidade relacionada. Este artigo apresenta o projeto ReNPAD (Rede Nacional de Pesquisadores em Altas Diluições), uma iniciativa brasileira que objetiva agregar pesquisadores envolvidos em pesquisas em Altas Diluições, a fim de estimular a interação entre os membros e dar visibilidade interna e externa aos trabalhos por estes desenvolvidos.

Palavras-chave: ReNPAD, Altas Diluições, banco de dados, pesquisadores, redes.

ReNPAD: Red Nacional de Investigadores en Altas Diluciones

RESUMEN

Algunas cuestiones importantes para el desarrollo de la Ciencia es saber quien está investigando que, con quien y cuando. Estas cuestiones son todavía más importantes a los involucrados con la investigación en altas diluciones, un campo científico multidisciplinar emergente y cuyos conceptos, métodos y modelos carecen todavía de validación. Así como en otras áreas, muchas cuestiones pueden tratarse con la ayuda de redes puesto que la comunicación entre pares acelera el proceso de concepción y refinado de conceptos, metodologías y estándares, lo que da consistencia a los conocimientos emergentes. Una red temática puede ser eficaz para la construcción de una identidad propia para la Ciencia de las Altas Diluciones y otras comunidades relacionadas. En este artículo se presenta el proyecto ReNPAD (Red Nacional de Investigadores en Altas Diluciones), una iniciativa brasileña que pretende acercar investigadores interesados en las Altas Diluciones, con el objetivo de estimular la interacción entre los investigadores y dar visibilidad a la labor desarrollada por ellos.

Palabras claves: ReNPAD, altas diluciones, bases de datos, investigadores, redes.

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