

***ComCiência* online magazine: 15 years investing on training and on scientific culture**

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Abstract

ComCiência is a monthly popular science magazine from Brazil that is celebrating 15 years old. It is an open access publication written by post-graduation students of Science Communication at the State University of Campinas (Unicamp) as well as edited by its researchers. Since 1999, this online magazine has worked as a laboratory to think and practice science journalism dealing with science in a broad and multidisciplinary way. *ComCiência* was born in a blooming moment for science communication in Brazil as the institutions of research and education, as well as the research foundations, have increasingly invested in popular science magazines. Therefore, science can talk directly to society instead of been a source of information for the media. This movement is

extremely rich since it contributes to train science journalists as well as motivating science community to establish a closer relationship with journalists and society. *ComCiência* is now been remodeled in order to improve new strategies of communication including academic papers about science communication.

Introduction

Popular science magazines not only reflect preoccupation to inform society about science advancement, policy, risks, costs, process and so forth, but also a social demand and interest toward science. We can always identify early publications that contained news about science and technology in the history of any country. Science, as any other human production, can raise economic and public interest.

The first magazine entirely dedicate to science was probably *Ciência Popular* in 1948 (it last 212 editions), and then *Ciência e Cultura* (started in 1949 by the Brazilian Society for the Advancement of Science – SBPC). *Ciência e Cultura* was born o be a publication that would bring scientists and public together, yet after three phases it became much more a science journal and in 2002 Labjor remodeled it and since then it is a popular science magazine with 8,000 free copies. From 1940's there was great effort to create universities, research institutions and science policy in Brazil, so that the academic community was strengthen (SCHWARTZMAN, 2001).

Yet, the scenario in science communication magazines shifted in the 1980's, when we consider as a blooming period for science communication in Brazil. Probably this is due to the redemocratization in 1985, after 20 years of Militar Government, and a clear need to popular participation. In 1982, SBPC started one of the most traditional national popular science magazine, *Ciência Hoje*. Edited and made by scientists and journalists this magazine was inspired by *Scientific American* and *La recherche* and *The new scientist*, it aimed at demystify science and to value the national science. The magazine gained an edition dedicated to children in 1986 (*Ciência Hoje das Crianças*). Two other commercial magazines of science communication emerged: *Superinteressante* (1987) and *Globo Ciência* (1991 and later changed to *Galileu*) (BARATA, 2006), a sign that science was an interesting market niche.

At the end of 1990's science communication started to be an organization of experts and there were investments on academic events and post-graduation courses. As a result, in 1999 there was the first governmental policy on science communication and the first popular science magazine (October) published by a scientific institution, both by the São Paulo Research Foundation (Fapesp). The *Pesquisa Fapesp* magazine was first freely distributed to researchers and students financed by Fapesp (44,000 samples), started newsstand sales three years later and today it is one of the most celebrated magazines on popular science in the country. *ComCiência* online magazine of science journalism was created in July of 1999, as a result of the beginning of the Specialization course in science journalism at the State University of Campinas (Unicamp). The project included 6 students who received the new science communication scholarships offered by Fapesp. After Fapesp other Research Foundations created similar publications, as the Minas Gerais Research Foundation (Fapemig) did with *Minas Faz Ciência* magazine in December 1999 (20,000 copies), and Amazonas Research Foundation (Fapeam) launched in August 2005 *Amazonas Faz Ciência* (interrupted in 2013) and Rio de Janeiro Research Foundation (Faperj) published *Revista Rio Pesquisa* in December of 2007 (18,000 copies). As for similar publications initiatives by universities there are still few examples. In 2009, the University of Brasília (UnB) launched the *DARCY* magazine with 20,000 issues freely distributed. The goal is to communicate with society about the activities produced and developed inside the university's walls, become a tool for education and to train science journalists. Another example is *A3* (the Scientific and Cultural Journalism Magazine) published in October 2011 by the Federal University of Juiz de Fora (UFJF, Minas Gerais State). It still does not have a regular periodicity, with an average of two issues per year, but it publishes 10,000 free copies. Probably one of the most successful is *Unesp Ciência*, by São Paulo State University (Unesp) created in September of 2009. A strong bet to improve the image and visibility of this big public university that usually competes for the best students with the other two state universities USP and Unicamp. The Unesp gathered an experience team of journalists with great commercial media background that produced a great popular science magazine that has 25,000 free copies.

This movement started in 1999 until nowadays indicates a very rich and dynamic period of science communication in Brazil, even though the country is also affected by

the reduction of science sections in the biggest and most traditional newspapers as *Folha de S.Paulo* and *O Estado de S.Paulo*. The increasing number of magazines of popular science published by universities and science institutions and foundations show that science communication has finally become part of science policy. A good indicator is the fact that there are six popular science magazines indexed in SciELO (the biggest open access library in the world and the most important Brazilian research depository) and they have an important indicator of science impact for journals, called Qualis. This means that if a scientist contributes to those magazines it will add a contribution to his or her curriculum, differently of what would have happened some years ago.

***ComCiência* magazine creation**

This movement toward a new level of science communication in Brazil led to the emergence of the first presential course of specialization in science journalism in the country in 1999¹ as an initiative and implementation of the Laboratory for Advanced Studies in Journalism (Labjor) at Unicamp, in partnership with the Department of Science and Technology Policy (DPCT) of the Institute of Geosciences, and the Department of Multimedia (MMD) of the Institute of Arts, both from Unicamp. The course aimed at training both scientists and journalists to handle with science, technology and innovation information. Its pioneering format, has attracted not only journalists interested in acting or improving the field, but also graduate students or scientists with different scientific background and in different stages of career. The first group of students was responsible for creating *ComCiência* magazine, as a proposal of the researcher Monica Gonçalves Macedo and Carlos Vogt (. According to Vogt, Macedo & Evangelista (2003).

The guiding idea behind the magazine is that it works as an experimental science journalism laboratory to develop capacities in the field and, at the same time, a means of communication for journalists, science communicators and to people curious about knowledge in general. (p. 112)

¹ In 1982 there was the first specialization distance learning course of science journalism offered by the Coordination for the Improvement of Higher Education Personnel (Capes).

The project have also included another difference related to other publications emerging during that period, which was the digital universe. The internet proved to be at the time an instrument with great potential for science communication. During the early years of the World Wide Web, it was already observable a huge amount of information about medicine, science and technology (MACEDO, 2003), in different formats, such as scientific papers, lectures recordings, biographies of scientists and material about science institutions. Following this trend, the *ComCiência* was designed to be published only in the online format, in order to harness the communicative potential of the internet, using hypertext features – search engines, “clickable” maps, associative links – which allow increasing the content therein published almost in infinite ways.

The choice on the online format took into account the reduced cost, as well as the facilities on the production mode, such as the reduced crew – designer and webmaster – flexibility in updating the contents and the possibility of maintaining a file with all content published. Unlike other media and products available on the internet *ComCiência* has always been of open access and free. All these elements seem to fit perfectly into a publication that would be produced in the context of a course, for a transitional team – reporters and students – and without any specific budget.

In 2000, during the 52nd Annual Meeting of the Brazilian Society for the Advancement of Science (SBPC) in Brasília, it was agreed that *ComCiência* would be an official publication of the entity. The initial model, including thematic reports produced by groups of students, gave rise to a set of reports, expert articles, interviews and reviews, yet keeping the idea of deepening topics chosen during newsroom meetings with relevant and actual S&T context. In addition to the pieces of journalistic nature it has also started to publish monthly poems and cartoons. The new project also included the news section, weekly updated, as a way to foster the readers interest on science and technology (VOGT, 2001).

The Science Media Fellowship Program (Mídia-Ciência) of Fapesp, launched in the same year of *ComCiência*, has significantly benefited the magazine produced by Labjor. Until now, Labjor’s students are the main users of this program.

ComCiência was developed with pedagogic motivations, with the support of the Science Media Program, and since then it has achieved significant recognition in the

science journalism field. It has become a source of information for other publications, such as the *Coletiva* magazine from the Joaquim Nabuco Foundation, *Pré-Univesp*, a digital magazine that gives support to students who want to enter university and that was created in 2010 by the Virtual São Paulo State University (Univesp) by an initiative of Labjor/Unicamp, and news agency, as the Fapesp News Agency and *Ciência e Cultura*, news agency created in 2010 by the social communication course at the Federal University of Bahia (UFBA). In addition to work as a laboratory for many science journalists who currently compose traditional media and press offices of major research institutes and universities in the country.

Today *ComCiência* is at volume 156, and it has dealt fairly relevant topics to contemporary society, deepening the debate by providing analyzes of multiple points of view, as well as revealing the multidisciplinary approaches to each of them. It has published about “Oil”, “Math”, “Music”, “History of Science”, “Science Policy” as well as “Sports”, “Perfume”, “Beauty” and “Monsters”, just to give a few and varied examples. As part of *ComCiência* team there has been almost 100 students that have gotten scholarships, as well as a large number of volunteers, and postgraduate students of Labjor. The magazine has also contributed to stimulate science communication among hundreds of scientists and experts who have, during these 15 years, written articles or been sources of information for news stories.

Reader profile and reading purposes

Part of the project prepared by journalist Monica Macedo in 1999 began to be implemented with the support of the Master research of Cunha (2005). He studied the patterns of reading and learning on the internet, by searching, in principle, the profile of science and technology news readers in the digital media and the type of information frequently sought by this reader in hypertext environment of science media. It was organized and evaluated the data of part of the readers voluntarily registered at *ComCiência* site.

The registered data show that *ComCiência* average reader it mainly young: 60% are between 20 and 39 years old. Most are male (53%) and the educational level is high, with 56% who are graduated or undergraduate. The *ComCiência* contents are also able to

reach a share of younger and non-university readers: 10% are under 20 years old, and 11% have an average level of education, part of them are students of elementary or middle school. This indicates that science communication conveyed by *ComCiência* is accessible to a nonspecialist audience.

Universities, however, host most of those who are interested in news about S&T published online: 25% of the magazine readers are students and 20% are researchers or university professors. *ComCiência*'s content is used by teachers of elementary and secondary education as readings reference. These teachers represent 8% of the readers and they find rich material to be used in the classroom as extracurricular material, according to messages received by them. In addition, applicants frequently request copyright authorization to use the magazine content in textbooks. The variety of topics covered by the magazine also foster science journalists (4.5% of readers). Several reports originally published in *ComCiência* echoed in other media. A great number of readers (53.5%) live in the Southeast of Brazil, where there are some of the major universities and some of the most significant research centers in the country. Nevertheless, the magazine reaches the whole Brazil and several foreign countries.

Brasília (the capital), fourth in the rank of Brazilian cities with the highest number of readers, has 3.5% of all readers. It can be inferred that the magazine is also read by decision-makers in S&T policy, which can be confirmed by the presence of email domains belonging to the Ministry of Science and Technology, the Ministry of Environment, the National Council for Scientific and Technological Development (CNPq) and the National Congress. The other cities were São Paulo (1st), Rio de Janeiro (2nd) and Campinas (3rd), all located at the Southeast.

Future challenges

Despite its good performance, the *ComCiência* magazine has to face new challenges. It has to improve its mode of production by acquiring softwares that will both enable faster upgrade and allow intensive use of multiple resources such as images, audio and video.

Thus, some changes are being planned for the magazine. Similarly to its creation linked to a post-graduation course, we have considered to wide up *ComCiência*'s scope,

following new requests of the Laboratory, which is emerging since the creation of the Master Program in Science and Cultural Communication, in 2008. This year, the Master course will sum up 50 dissertations concluded and it has reached the best evaluation score for a master's program in Brazil provided by the Coordination for the Improvement of Higher Education Personnel (Capes), rate 5. This year the challenge is to certificate the PhD program in Science and Cultural Communication, in partnership with the Institute of Language Studies (IEL) at Unicamp, so that it can be launched in 2015.

The new magazine should increase the area assigned to the publication of papers about research related to the lines of the MDCC post-graduation program as the following: a) scientific culture; b) public perception of science and technology; c) information, communication, technology and society; d) literature, arts and communication society. As a science journal, the new *ComCiência* will rely on a body of collaborators to evaluate the papers before publication and we are planning to get financial support to hire IT professionals in order to ensure the inclusion of not only texts, but also audiovisual resources that should be used in the contents of the magazine.

The new format will include reports and news about S&T to maintain the initial project of having Labjor as a place where students can practice what is being taught during the post-graduation courses, while they can experience deeply the routine of the field, as well as the difficulties and delights of science, technology and innovation journalism, and, specially, by revealing the responsibility that the activity requires.

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