

Uses of public communication in the scientific culture of Brazil and Canada: a comparative study between the Federal University of Uberlandia and the University of Ottawa¹

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ABSTRACT

The article has a proposal is to conduct a comparative study of scientific culture in Brazil and Canada, observing the uses of Science, Public Communication, and technology transference (innovation) at the University of Ottawa and Federal University of Uberlandia, aiming at approaching the interrelation between academic production and its media popularization to make science popular. Such proposal is based on the conception that universities and research institutes develop a significant quantity of scientific production, but no data shows if these productions overcome the universities borders, particularly through media and diverse actions of popular science. The problematic that supports the proposal is the fact that the institutions must have their communicational proposal in conformity with the public interest and also with the guidelines of Public Communication. In addition, it is specifically important for popular science and technology transference to be focused on science popularization. The study considers that the concept of Public Communication of Science (PCS) is little discussed among researchers and professionals in the field of communication. It understands that PCS must go beyond the process of scientific dissemination and be understood as an area of communication focused on the wide dissemination of science, technology, innovation and scientific knowledge in order to popularize knowledge and bring science closer to the citizen. The initial results indicate that the efforts of most institutions are limited to the simple use of specialized / scientific journalism as an unique feature to promote access and enable the right to information on science and technology.

Keywords: Public Communication, Science Popularization, Scientific Culture.

INTRODUCTION

The presented paper emerges as an outgrowth of researches under development that have been investigating the diffusion and popularization of countless productions/findings and scientific experiments with accessible language for the general society. It is worth mentioning that the project aims at approaching a stage that precedes such activities, since it is related to the Public Communication (PC) and its role in society's scientific culture.

The main focus of the research is the Public Communication of Science (PSC), its role in the

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scientific culture of the society and in higher education institutes. The proposal anticipates a survey on Public Communication and Science Popularization in both Universities (Uberlandia and Ottawa) by the observation and analysis beyond the regulatory framework about science and technology in the above-named countries. Tools and media will be used to work with science popularization issues, in a broader sense, approaching everything that is related to the scientific production in institutions, such as teaching, research, extension and innovation.

The popularization through different medias is the journalistic view of Public Communication (BRANDÃO, 2009) that should be understood in a wider sense than just giving information and should include possibilities that enable the citizen to have vast knowledge of the information that belongs to them, including information they do not search because they simply do not know it exists (DUARTE, 2009, p. 64). The contribution for the area is in the comprehension that the viewpoint of Public Communication can be observed in institutions as communicational production, as well as in media to access information.

According to Manso (2015a, p. 1), Public Communication of Science is a “substantial space of mediation and dialogue between academy and society”, and it involves, in the formation of a scientific culture, “different social actors of several atmospheres”, whose concept is under circulation in social medias where the public opinion is constituted. Manso (2015b) also asserts that, Public Communication of Science treats the importance of considering the citizen who is not specialized in science, because such citizen is the social protagonist in the scientific culture of a society.

A quick assessment would give the impression that the most viable way to solve the problem of how (and if) institutions and countries use Public Communication to popularize science would be using low cost massive media that serves a greater number of people. Particularly, such communication could be in public and private formation spaces, such as associations, communities and schools, working in the formation of children, young adults, adults, literate and illiterate. However, this proposal/work plan assumes that the Universities, in general, cannot yet be effectively present in such spaces without using specific tools. Such fact justifies the necessity to observe and follow the use of media, groups and specific communicational tools in order to popularize science, reaching such spaces.

It is worth mentioning the fact that the chosen universities, as well as any other university, deal with the permanent conflict of materializing in a practical and consistent way, one of their main objectives, which is the interconnection between teaching-research-extension on the formation of all individuals that are part of the university community. Therefore, universities, besides producing and publicizing knowledge, must permanently contribute to the social, political, economic and cultural development of the society, and for the formation of active and participative citizens.

Previous research in Brazil indicate that even though teaching, research and extension activities are involved with scientific knowledge, only when it comes to research and innovation science stands out. Therefore, the theme of this proposal is considered of public interest, not only because of the public money invested and also the expected research grant financial report, but because of the great impact

in society, since research results, in general, “incorporate social, political, economic and corporative concerns that go beyond the limits of sheer science.” (BRANDÃO, 2009, p.4, original in Portuguese).

According to Brandão, “it is this very public identity and public space where it happens that identify scientific communication with Public Communication”. BRANDÃO, 2009, p.4). Thus, according to Brandão, the prevalence of science in contemporaneity” force institutions to extend scientific promotion beyond the circle of its peers.” (BRANDÃO, 2009, p.4, original in Portuguese). Therefore, it is unquestionable the science communication nature that institutions must exercise, since, as scientific development hubs, take direct or indirectly commitments with citizenship.

It is also worth mentioning the conception that Public Communication is in interface with organizational communication. According to Brandão (2009), the area attempts to analyze the communication inside the institutions and with their audiences. A concern with the audience can be seen, that is why the authors, Suárez and Zuñeda, consider that Public Communication has to do with “the seriousness and efficiency that the institutions (companies, social or political organizations) face their relations in the surroundings and the comprehension that they assume, internally and socially, this communicative function.”³ (SUÁREZ; ZUÑEDA apud BRANDÃO, 2009, p.2).

Above all, the communication in institutions that work with research in popularization of its results is of great responsibility, with the practice of making them reach the audience through media or other tools that guarantee a better way of science popularization, enabling the Public Communication of Science. The specificity of scientific popularization by different medias and activities, and of the scientific journalism as a representation of reality and tool for science popularization and consolidation of the scientific culture is handled in this proposal/work plan.

The necessity to invest in research about Public Communication and about the production of news pieces in Science & Technology is justified considering the lack of such news in the press, not only when it comes to the institutional initiatives and but also when it comes to the communication vehicles. Only a few newspapers or Internet news portals have specific editing to publicize or produce material related to this theme, which indicates that the space and tools to popularize science are usually against the flow of scientific production.

CONTEXTUALIZATION OF THE ADDRESSED ISSUE

The research assumes that Public Communication occurs in the scope of the scientific culture of a society, and that this society is conceptually inserted in a social environment where the public opinion is built, directly related to the symbolic capital of a society (MANSO, 2015a, p. 3-5). For the author, the efforts to constitute scientific culture in the researched countries are directly related to the symbolic capital (diffused or objectivized), juridical-legislative factors and to the Public Communication of Science, to enable measures that provide institutionalization of such culture in society (MANSO, 2015a, p. 3-5).

³ Free Translation.

In such context, the situation can be problematized with the following questions: What is the social resonance of the scientific researches in the countries? Does society know the scientific production of its country? Among the countless variables that influence such situation one of them has been receiving greater attention in the last years: popular science, focused on science popularization.

Several researchers think it is necessary to observe if and how popular science of the developed researches in academy have been carried out, since society needs to have more and more contact with academic science so that these connections between scientific knowledge and popular knowledge are established. In this context, work issues about what the role is and the importance of Public Communication of Science to evidence social resonance of researches and how to use law principles concerning information, public interest and Public Communication in science popularization in higher education institutions.

The concept of Public Communication (PC), the definition of such concept is not a general agreement and it is still little discussed among the researchers and professionals of the area. Arguments cause some understanding term aspects, which can be applied to varying senses. Not rarely, terminology induces to think that it is only about a concept that, even though it is still under consolidation according to Brandão (2009), might be applied to multiple knowledge and activities, as organizational, scientific, governmental, politics as strategies of organized civil society communication, made public and meeting the public interest. The contribution of the proposal, in terms of theoretical knowledge, is to discuss the Public Communication of Science/innovation in research and higher education institutes.

Public Communication can be applied to all these circumstances, and can be, according to what is adopted in South America and The United States of America, summarized as something that entails “the use of the term Public Communication meaning an information process aimed at the public sphere” (BRANDÃO, 2009, p.2) since it focuses on public interests (and not only on the interest of the audience), promotes citizenship and enables democracy. That is the reason why the State, Government and other sectors of society can practice it. Thus, it concerns directly to different developed or ongoing research that I currently propose.

Public Communication, when present, enables that, on one side, there is the publicizing of information that is relevant to public interest, and on another side, enables the receiver to access the right for such information, having the opportunity to participate in the debate in the public sphere. Different organizations can develop PC since it is understood among the activities described by Brandão. Governmental Communication, for example, according to Graça França Monteiro, is developed by government agencies, “amongst which, direct and indirect management agencies, autarkies on the federal, state and municipal sphere.” (BRANDÃO, 2009, p.39).

A contribution that must be included in this reflection is Public Communication and its relation to the public sphere, since as argued by Heloiza Matos; PC is “the debate that takes place in the public sphere between the State, government and society, about topics of collective interest.” Actually, it is a process of negotiations through communication, typical of democratic societies” (DUARTE, 2009, p.

11). Elizabeth Pazito Brandão, however, understands Public Communication as a “ communicative process from instances of society that work with information aimed at citizenship. (DUARTE, 2009, p. 5). Therefore, the university, as part of the public sector, has its role in enabling relevant information to society.

Such discussion is directly related to the scientific culture and to C&T indicators in society, as argued by Vogt e Morales (2015, p.1), culture can be understood as the "group of processes related to science and technology that encompasses the production of knowledge to the scientific publicizing. "Public Communication is, therefore, directly related to the theme and decisive role in this process, since it is used to characterize a specific type of interlocution that covers an idea related to principles such as public interest, visibility, accountability, inclusion and participation in the organizational, political, state and media scopes (MARQUES; MAFRA; MARTINO, 2017, p. 77). It is worth mentioning too that Public Communication can be used in different social sectors, among which, those related to science.

According to Vogt and Morales (2015) and Manso (2015a) scientific culture is consolidated only if some criteria are met, in which the communication always occupies a fundamental role. Manso (2015a) says that there are two complementary alternatives of fomentation of the construction of scientific culture: Public Communication of Science, seen by the author as a mediation field between science and society, and legislative-judicial strategies. Vogt and Morales (2015) defend that scientific culture occurs through an spiral in which the first quadrant contains actions of science production and dissemination, and the second one involves the teaching of sciences and scientists training to deal with the media.

The importance of Public Communication of Science is noticed in such process related to scientific culture. The theme is still recent and in a certain way under consolidation, considering that concerning the study of Public Communication of Science in the United States in the twentieth century, Lewenstein (1994) said that at that time there was no national policy for Public Communication of Science and Technology, neither information base or political will to enable such reality. However, the author pointed out some traditions that while new at that moment, already showed a trend in the analyzed period and situations, and that may considered for the other countries, among them the ones inserted in the research proposal.

Lewenstein study (2004), shows that all initiatives are related to a specific culture and are connected to the theme of innovation as a process that involves the use, application and transformation of technical knowledge and scientific in problems associated with the production and commercialization regarding the direct relationship between society and its demands. Beyond the constant demand for innovation in the environment of companies, the importance of change between the actors that influence in the process is being recognized. Thus, for innovation to happen, the interaction among different agents (government, university/research centers and companies), appropriation of knowledge and technology production (ZEN, 2005) has to be considered important, and Public Communication usually mediates such relation.

Within this context, it is important to consider the fact that recent debates and contributions have been emphasizing the relevance of knowledge, science, and innovation to promote national economic development. Brazil, for instance, by recognizing the importance of innovation, led to great changes in the way companies, representative entities, learning and research institutions and public agencies (VELOSO FILHO; NOGUEIRA, 2006) act, such as Universities.

Considering the aforementioned, it is important to consider that industrial policy in Brazil, coordinated by correlating ministries (Science and Technology, Industry, etc.) and the scientific and technological policy, have been standing out as part of a national development strategy in some countries. In the first area, the measures to promote competitiveness of industrial complexes and production chains and the participation of these systems in foreign trade have been broadened, without, however, the same increase on Public Communication in such situations.

It has to be considered in such situation that many universities and research institutes have communication strategies and press offices, services that can help to build a bond with the community, since they relate to the media, main vessel, in this case, from where science and innovation are publicized to the regular public. Thus, one can assume that inside journalism, considered as a modality practiced by means of communication, there is a concern with the promotion of Public Communication and for that reason there should be a focus on themes related to science and innovation. In the same way, institutional and public communication that is well planned and positioned strongly collaborates, not only publicizing through vessels, but also in negotiation with the press, aiming at reaching the public in general.

Another aspect to be considered is related to the fact that, when presenting considerations for an effective science communication Cooke et al (2017) say that scientists used to involve themselves in some scientific communication way, beyond publications reviewed by peers, but still aim for their peers. Authors claim that despite many scientists make voluntary scientific communication; such behavior is more and more expected from scientists (explicitly or implicitly), being, sometimes, an institutional requirement or a research-funding agency. The authors presume that some scientists want to make scientific communication, while others feel obligated to do that. However, since there is no consensus to define the concept of Public Communication of Science, the scientific production has been publicized basically among researchers, in other words, in a scientist's flow only to their peers and funding agencies.

This research proposal is basically to perform a study on the scientific culture of Brazil and Canada, observing the role of Public Communication in such scientific culture and approach the interrelation between academic production/extension and innovation and its spread in different media and communication vehicles. University of Ottawa (Canada) and the University of Uberlandia, as well as countless universities produce a significant quantity of material for popular science. The question is if these productions overcome the universities borders, particularly through communication means, in general, or Science Public Communication Actions of Science.

The problematic that supports the research concerns the fact that it is expected from the

universities that all its communicational production should be in conformity with the Guidelines of Public Communication, it is particularly important for its popular science to be focused on science popularization. In order to meet such demand, the intention of performing a documentary work of a scientific production survey and follow the Public Communication of Science in institutions, through the specialized/scientific journalism and other actions involved for science popularization and consolidation of scientific cultures in the countries. It will also be necessary to follow the process of communicational production of institutions and the relation of them to communication means to know if and how Public Communication of Science is produced in universities and how this can be disclosed by the means of communication.

OBJECTIVES, METHODOLOGY AND ACTIVITIES TO BE DEVELOPED AND GOALS

The main objective of the proposal is to conduct a comparative study about the Public Communication actions in the scientific culture of Brazil and Canada, enabling the execution of a survey and analysis of the science media coverage, innovation and extension in the involved institutions, through the news collection, and journalistic material (specialized or not) about Science and Technology. Based on the previous information collected it is intended to search information through documentary research, both in the administration of higher education of the institutions and media, about the strategies and paths used in the search of science popularization produced at University of Ottawa and Federal University of Uberlandia.

Because of its wide and multidisciplinary features, the proposal/work plan will also cover data collection, which will comprise their interpretation and, if possible, the proposal of construction of new materials and ways to identify and select scientific and technological themes and their impact on the popularization of science in the institutions. To guide its actions, the proposal/work plan will start from the following tripod: the concepts of science, technology and innovation, Public Communication and the regulation mark about science and technology in the researched countries; indispensable factors for the consolidation of a scientific culture in contemporary society.

That means that when it focusing the interaction between Public Communication and scientific content produced in such institutions, as well as the many tools and actions for publicizing such content, it will observe and analyze the role of Public Communication in the scientific culture in which they are inserted. The choice to undertake a descriptive and exploratory research is justified because this kind of research reveals itself as an mechanism of observation, analysis and interpretation of facts that are considered important, although not often studied in both countries. It is also a research based on documents, since it includes as documents, researches, pictures, videos, reports, newspapers, magazines and other forms of registering reality.

In fact the Public Communication activity and science popularization in institutions. Intentions and actors projected by Koçouski (2013) are going to be observed, as well as the Public Communication axis by Duarte (2011).

During the research period it will be necessary to define technical specifications to facilitate these procedures, which will be done from a list of services and software related to capitulation,

production and publicizing of contents. On a second stage, after data collection and analysis, it will be possible to observe for a few months the functioning and impact of each one of them. Open maps with the possibility of including content layers to insert and visualize indexes and topics will also be used, including, as well, the appropriate devices to their location and interrelation with themes of interest related to the scientific culture of the researched countries.

RESULTS, CONTRIBUTIONS AND IMPACTS

By the end of the project, it will be done the application of the results, aiming at finding solutions for the practical problems located in the research. It is expected that, by the end of the first results, the presentation of consistent proposals that provide (if needed) structural and content alterations, mainly those developed by Communication Administrations, which are agencies directly connected to the Superior Administration of the institutions, but, mostly of the time, they have a view of science popularization distant from the society.

It is also expected to provide advisory subsidy for new projects by public policies, non-governmental organizations (NGOs) or private for science popularization and for the consolidation of scientific culture in the countries. It goes beyond incentivizing the remarkably efficient projects from the science popularization view, and obtaining partnerships and publications with the findings, also ways of including in the schedule of the individuals and governs worries the importance to popularize the achievements in science and technology in institutions and countries. The perspective of the proposal is to improve activities related to Public Communication in the institutions, considering the scientific consolidation in Brazil and Canada.

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